September

7–11 Illuminating Engineers Society, Fairmont and Mark Hopkins Hotels, San Francisco, California

13–18 American Chemical Society (136th National Meeting), Atlantic City, New Jersey

21–25 Instrument Society of America, 14th Annual Instrument-Automation Conference and Exhibit, International Amphitheater, Chicago, Illinois

October

8–10 *Optical Society of America*, Chateau Laurier, Ottawa, Canada

8–10 American Association of Textile Chemists and Colorists, Annual Convention, Washington, D. C.

December

26–31 American Association for the Advancement of Science, Annual Meeting, Chicago, Illinois.

JOURNAL OF THE OPTICAL SOCIETY OF AMERICA VOLUME 48, NUMBER 12 DECEMBER, 1958

Author Index to Volume 48

(L) indicates Letters to the Editor and (E) indicates Errata. It will be noted that there are no references to "see someone else" in the Author Index. Although it has meant a little duplication, there has been included under each author all articles in which he was author or co-author. All articles in which the author has participated are arranged in the chronological order of publication. A bibliography with author names arranged as in the original article is obtained by insertion of the author's name in the indicated (——) space under each indexed name. Although not strictly an authored article, we have included Book Reviews both under the book author as well as the reviewer.

The abstracts of papers presented at meetings are keyed by the same notation that identified them by day and session of presentation. If the paper covered by the abstract has been submitted and published in the same year as the abstract, this has been indicated by a solidus (/) between the abstract notation and the Journal page of the full article, i.e., 264(FA*12*)/622 indicates that the paper described in abstract No. FA*12* on page 264 has been published in full on page 622.

Acquista, Nicolo
Plyler, Earle K. and ——. Transmittance and reflectance of cesium iodide in the far infrared region—668(L)
Akin, Royal H. Portable, transistorized, photomultiplier photometer—283(TC*65*)
Alpern, Mathew. Variability of accommodation during steady fixation at various levels of illuminance—193
Alpert, Nelson L.
White, John U. and ——. Wide range infrared absorption cell—460
Altshuler, Thomas L. Procedure for the calculation of infrared transmission through coated optical materials—867(TD*81*)
Andrew, K. L. and K. W. Meissner. New germanium standard wavelengths in the region from 1998 A to 1630 A—31
Appel, A. V. and D. A. Pontarelli. Infrared polariscope for photoelastic measurements of semiconductors—289 (SA*11*)
Aricescu-Savopol, Ioana
Grigorovici, Radu and ——. Luminosity and chromaticity in the mesopic range—891
Ashley, Louis E. and Carolus M. Cobb. Single particle scattering functions for latex spheres in water—261
Azároff, Leonid V. and Martin J. Buerger. *The Powder Method in X-Ray Crystallography* (Book). Reviewed by H. Steffen Peiser—583

Babcock, Horace W. Deformable optical elements with feedback—500(L)
Back, Frank G. and Herbert Lowen. Generalized theory of Zoomar systems—149
Baird, K. M. and D. S. Smith. Preliminary measurements of some wavelengths of krypton 86 and mercury 198 lines —300
Baker, M. R., K. Fuwa, R. E. Thiers, and B. L. Vallee. Spectral excitation in high-temperature flames as a function of sample flow—576(L)
Barakat, N.
—— and H. Nooh. Principle of an interference refractometer—90
—— Interference fringes with cylindrically curved thin films—92
Barger, R. L. and K. W. Meissner. Mercury atomic beam lamp—22
Barkman, E. F. Specular and diffuse reflectance characteristics of achromatic aluminum surfaces—867(TD*82*)
Barnes, James M., Walter G. Mayer, and E. A. Hiedemann. Multiple diffraction of light by ultrasonic vibrations in transparent solids—663
Barnett, Dean J. and Franklin S. Harris, Jr. Effect of edge parameters in Fresnel diffraction of light at an infinite half-plane—872(SA*28*)
Barr, William L. Isotope shifts in hafnium—658
Bartley, S. Howard. *Principles of Perception* (Book). Reviewed by Glenn A. Fry—670
Bass, Arnold M. and K. G. Kessler. Large-aperture grating spectrograph utilizing camera components—871(SA*22*)
Batter, John F., Jr. Transport calculation of the net current of photons in an isotropically-scattering atmosphere—371
Baumeister, Philip W.
——, F. A. Jenkins, and M. A. Jeppesen. Characteristics of the phase-dispersion interference filter—280(TA*12*)
—— Design of multilayer filters by successive approximations—955
Beaumont, Donald
Gates, David M., Clyde C. Shaw, and ——. Infrared reflectance of evaporated metal films—88
Bedford, R. E.
—— and G. W. Wyszecki. Wavelength discrimination for point sources—129
—— and G. W. Wyszecki. Luminosity functions for various field sizes and levels of retinal illuminance—406
Bellamy, L. J. *The Infra-Red Spectra of Complex Molecules (Second Edition)* (Book). Reviewed by Wallace R. Brode—860
Berger, Curt, Axel Mahneke, and Otto Mortensen. Electronic multiflash generator for experiments in psychophysiological optics—191

Berger, Eda
——, **C. H. Graham, and Yun Hsia.** Some visual functions of a unilaterally color-blind person. I. Critical fusion frequency in various spectral regions—614
——, **C. H. Graham, and Yun Hsia.** Some visual functions of a unilaterally color-blind person. II. Binocular brightness matches in various spectral regions—622
Bergstein, Leonard. General theory of optically compensated varifocal systems—154
Biersdorf, William R. Luminance-duration relationships in the light-adapted electroretinogram—412
Bitterli, C. V.
Mahan, A. I., ——, and Carol G. Wein. Two-dimensional optical approach to the boresight error problem—290 (SB*34*)
Mahan, A. I., ——, and C. G. Wein. Boresight error properties of a two-dimensional wedge—874 (SB*52*)
Blank, Albert A.
—— Axiomatics of binocular vision. The foundations of metric geometry in relation to space perception—328
—— Analysis of experiments in binocular space perception —911
Bleil, C. E. and D. D. Snyder. Luminescence of CdS crystals at room temperature under intense irradiation—868 (TD*87*)
Block, Myron J. and Martin Harwit. Free surface of liquids as an optical element—480
Blough, Donald S. Rise in the pigeon's threshold with a red test stimulus during dark adaptation—274 (L)
Blough, Patricia McBride. Difference limen as a function of retinal eccentricity and background brightness—731
Bluemel, Hermann
Rudolph, Hellmuth and ——. Series of thin film ellipsometers—868 (TD*83*)
Boer, Anton P.
Clark, Dale A. and ——. Technique of preparing micro samples for the infrared microscope—869 (FA*21*)
Boileau, Almerian R.
Duntley, Seibert Q., ——, and David G. Simons. Photometry of the sky at high altitudes—873 (SB*43*)
Boll, R. H., J. A. Leacock, G. C. Clark, and S. W. Churchill. *Light-Scattering Functions* (Book). Reviewed by Wallace R. Brode—671
Boshoff, M. C. Gloss scale for paint surfaces—741
Boynton, Robert M.
DeMott, Donald W. and ——. Retinal distribution of entoptic stray light—13
DeMott, Donald W. and ——. Sources of entoptic stray light—120
Brackett, Frederick S. Interaction of radiation and matter—280 (T*2*)
Breneman, Edwin J. Dependence of luminance required for constant brightness upon chromaticity and chromatic adaptation—228
Brewster, Gordon F., Joseph F. Kunz, and Joseph L. Rood. Dispersion of some optical glasses in the visible and infrared—534
Brode, Wallace R.
—— Book review of *Encyclopedia of Physics* (*Handbuch der Physik*) edited by S. Flugge—277
—— Book review of *The Focal Encyclopedia of Photography* edited by Frederick Purves—277
—— Book review of *Proceedings of the Sixth International Colloquium on Spectroscopy* (*Amsterdam, 1956*) edited by W. van Tongeren, F. Freese, and E. H. S. van Someren —359
—— Book review of *Light-Scattering Functions* by R. H. Boll, J. A. Leacock, G. C. Clark, and S. W. Churchill—671
—— Book review of *Jenaer Jahrbuch* by Carl Zeiss—671
—— Book review of *Photographic Sensitivity, Volume 2. Tokyo Symposium* edited by Shin Fujisawa—860
—— Book review of *The Infra-Red Spectra of Complex Molecules* (*Second Edition*) by L. J. Bellamy—860
—— Book review of *Wörterbuch der Photo-, Film-, und Kinotechnik, 1 Band* edited by Wolfgang Grau—1020
Broida, H. P. Spectra of solid "active" nitrogen—864 (TB*32*)
Broido, A. and A. B. Willoughby. Measurement of intense beams of thermal radiation—344
Brown, Charles R. and D. M. Forsyth. Fusion of intermittent photic stimuli with alternating durations—866 (TC*64*)
Brown, H. Some optical problems encountered in the calibration of air survey cameras—287 (FC*65*)
Brown, Robert G.
Edwards, T. Harvey and ——. Method of double-passing Pfund-type grating monochromators—289 (SA*15*)
Edwards, T. Harvey and ——. Second method of double-passing Pfund-type grating monochromators—871 (SA*24*)
Brown, Robert H.
—— Influence of stimulus luminance upon the upper speed threshold for the visual discrimination of movement—125
—— Effect of a target's position in an empty visual field on its visibility—287 (FD*83*)
Bruce, C. F. Obliquity effects in interferometry—286 (F*51*)
Buchdahl, H. A.
—— Optical aberration coefficients. II. The tertiary intrinsic coefficients—563
—— Optical aberration coefficients. III. The computation of the tertiary coefficients—747
—— Optical aberration coefficients. IV. The coefficient of quaternary spherical aberration—757
Buerger, Martin J.
Azároff, Leonid V. and ——. *The Powder Method in X-Ray Crystallography* (Book). Reviewed by H. Steffen Peiser—583
Burch, Darrell E. Emission spectrum of the earth's atmosphere from 4 to 22.5 microns—873 (SB*44*)
Burnham, Robert W.
—— Visual selection of color film neutrals—215
Newhall, S. M., ——, and R. M. Evans. Effects of shadowing on surface-color perceptions—283 (TD*81*)
—— Comparative predictions of color appearance with a change from daylight to tungsten adaptation—284 (TD*86*)
Newhall, S. M., ——, and R. M. Evans. Color constancy in shadows—976
Burns, Keivin. Necrology—762
Byram, E. T., T. A. Chubb, and H. Friedman. Evidence for water vapor at high altitudes from rocket measurements —282 (TC*62*)

Cahn, Lee and B. D. Henderson. Performance of the Beckman DK spectrophotometer—380
Campbell, Charles E.
Johnson, Irving and ——. Detection of free radicals in a shock tube by absorption spectroscopy—865 (TB*41*)
Campbell, F. W., G. Westheimer, and J. G. Robson. Significance of fluctuations of accommodation—669 (L)
Carpenter, Robert O'B., Julia A. Wight, Antonio Quesada, and Richard E. Swing. Predicting infrared molecular attenuation for long slant paths in the upper atmosphere—285 (FB*31*)
Carpenter, V. J.
Miller, N. D. and ——. Effect of viewing conditions on observer accuracy using stereoplotting equipment—866 (TC*65*)
Catalán, Miguel A. Necrology—138
Chance, Britton. Spectroscopy of enzymes in living cells—869 (FA*11*)
Charles, G. W.
—— On the energy levels of the configuration $6p^3$ in HgI—668 (L)
—— Compilation of data on some spectra of thorium—859 (L)

Chasmar, R. P.
Smith, R. A., F. E. Jones, and ——. *The Detection and Measurement of Infrared Radiation* (Book). Reviewed by David M. Gates—198
Cholet, P.
Lasser, M. E., ——, and E. C. Wurst, Jr. High-sensitivity crystal infrared detectors—468
Chubb, T. A.
Byram, E. T., ——, and H. Friedman. Evidence for water vapor at high altitudes from rocket measurements—282(TC*62*)
Church, C. H. and C. W. Peters. Electric field induced infrared absorption of H_2 and D_2—865(TB*43*)
Churchill, S. W.
Boll, R. H., J. A. Leacock, G. C. Clark, and ——. *Light-Scattering Functions* (Book). Reviewed by Wallace R. Brode—671
Clark, Dale A. and Anton P. Boer. Technique of preparing micro samples for the infrared microscope—869(FA*21*)
Clark, G. C.
Boll, R. H., J. A. Leacock, ——, and S. W. Churchill. *Light-Scattering Functions* (Book). Reviewed by Wallace R. Brode—671
Clark, K. C. and G. J. Romick. New meridian auroral spectrograph—871(SA*23*)
Cobb, Carolus M.
Ashley, Louis E. and ——. Single particle scattering functions for latex spheres in water—261.
Corliss, Charles H.
Martin, William C. and ——. Energy levels and spectrum of singly ionized iodine (I II)—865(TB*44*)
Corning, Mary E. Wallace R. Brode appointed Science Adviser to Secretary of State—141
Cornsweet, Tom N.
——, H. Fowler, R. G. Rabedeau, R. E. Whalen, and D. R. Williams. Changes in the perceived color of very bright sources—283(TD*84*)
—— New technique for the measurement of eye movements—288(FD*85*)
Krauskopf, J., ——, and L. A. Riggs. Analysis of saccadic eye movements during monocular and binocular fixation—288(FD*86*)
—— New technique for the measurement of small eye movements—808
Cox, J. T.
——, J. E. Waylonis, and W. R. Hunter. Optical properties of evaporated zinc sulfide in the vacuum ultraviolet—281(TA*13*)
—— **and G. Hass.** Antireflection coatings for germanium and silicon in the infrared—677
Crosswhite, H. M.
Fastie, Wm. G., ——, and P. Gloersen. Vacuum Ebert grating spectrometer—106
Curcio, J. A. and G. L. Knestrick. Correlation of atmospheric transmission with backscattering—686

Dartnall, H. J. A. *The Visual Pigments* (Book). Reviewed by V. J. Wulff—761
Davidson, H. R.
—— **and Henry Hemmendinger.** Colorant mixture computor—281(TB*33*)
Franklin, S. G., ——, and Stewart Sease. MacAdam color-difference computor—281(TB*34*)
—— **and H. Hemmendinger.** Comparison of Munsell and MacAdam color spaces—606
Davis, John K. Wide-field aspheric cataract lens series—867(TC*67*)
Davis, Sumner P.
Harrison, George R., Neville Sturgis, ——, and Yahiko Yamada. Production and testing of 10-inch diffraction gratings—287(FC*63*)
Lindner, John W. and ——. Zeeman effect data for the spectra of erbium—542
Davis, W. C.
Holland, T. E. and ——. Effects of elastic distortion of rotating mirrors on time resolution in smear cameras—365
DeBell, Arthur G.
Simmons, Frederick S. and ——. Photographic technique for measuring temperatures in luminous rocket exhaust flames—717
Deirmendjian, Diran. Temperature dependence of the Rayleigh scattering coefficient in the atmosphere—1018(L)
De Kerf, J. L. F.
—— Accuracy of tristimulus computations—334
—— Dye-mixture analysis with an electronic calculating punch—972
De Kleine, E. Hoyt. Quantitative evaluation of color perception: an hypothesis—722
DeMott, Donald W.
—— **and Robert M. Boynton.** Retinal distribution of entoptic stray light—13
—— **and Robert M. Boynton.** Sources of entoptic stray light—120
DePalma, James J.
Lowry, Earl M. and ——. Quantitative relation between chromaticity differences and luminance differences—820
Diamond, A. Leonard. Simultaneous brightness contrast and the Pulfrich phenomenon—887
Dieke, G. H. Spectroscopy of excited gases—284(F*2*)
Dillon, Donald J. and Richard T. Zegers. Quantal determination and statistical evaluation of absolute foveal luminosity thresholds and of threshold variability—877
Dimmick, Forrest L. and Richard E. Wienke. Effect of luminance level on the red/green ratio—283(TD*83*)
Djurle, E.
Rodney, W. S. and ——. Infrared phase-contrast refractometer—388
Dobrowolski, J. A. Mica interference filters with transmission bands of very narrow half-widths—868(TD*84*)
Dolin, Stanley
Leftwich, Richard, Henry Miserocchi, and ——. Series of controlled infrared blackbody radiation sources—289(SA*12*)
Dows, David A. Calibration of infrared prism spectrometers—73(L)
Duckworth, H. E. *Mass Spectroscopy* (Book). Reviewed by Charles F. Robinson—584
Duntley, Seibert Q.
—— **and David G. Simons.** Luminance of the horizon sky at high altitudes—282(TC*61*)
——, Almerian R. Boileau, and David G. Simons. Photometry of the sky at high altitudes—873(SB*43*)
Dutton, David
Smith, Abbott and ——. Behavior of lead sulfide photocells in the ultraviolet—1007
Dzn, H. de Lange
—— Research into the dynamic nature of the human fovea → cortex systems with intermittent and modulated light. I. Attenuation characteristics with white and colored light—777
—— Research into the dynamic nature of the human fovea → cortex systems with intermittent and modulated light. II. Phase shift in brightness and delay in color perception—784

Edwards, T. Harvey
—— **and Robert G. Brown.** Method of double-passing Pfund-type grating monochromators—289(SA*15*)
—— **and Robert G. Brown.** Second method of double-passing Pfund-type grating monochromators—871(SA*24*)
Eldridge, Ralph G. and John C. Johnson. Diffuse transmission through real atmospheres—463

Enoch, Jay M.
—— Summated response of the retina to light entering different parts of the pupil—392
—— Effect of the size of a complex display upon visual search—867(TC*66*)
—— **and Glenn A. Fry.** Characteristics of a model retinal receptor studied at microwave frequencies—899
Evans, John W. Solc birefringent filter—142
Newhall, S. M., R. W. Burnham, and ——. Effects of shadowing on surface-color perceptions—283(TD*81*)
Newhall, S. M., R. W. Burnham, and ——. Color constancy in shadows—976
Eyer, James A. Spatial frequency response of certain photographic emulsions—938

Fairchild, Charles O. Necrology—138
Farnell, G. W.
—— Phase distribution in the focal region of a microwave lens—290(SB*32*)
—— On the axial phase anomaly for microwave lenses—643
Fastie, Wm. G., H. M. Crosswhite, and P. Gloersen. Vacuum Ebert grating spectrometer—106
Faucher, Joseph A., George M. McManus, and Hans J. Trurnit. Simplified treatment of ellipsometry—51
Feldman, Charles and Margaret O'Hara. Luminescent phases in willemite films—816
Feldman, Cyrus. Spectral excitation of solutions in electrical discharges and flames—864(TB*31*)
Fielding, Alice J. Color temperature and scotopic thresholds—283(TD*85*)
Finkelstein, Nisson A. Fiber optics—a progress report—870(FB*31*)
Flugge, S., Editor. *Encyclopedia of Physics* (*Handbuch der Physik*) (Book). Reviewed by Wallace R. Brode—277
Ford, M. A., W. C. Price, W. E. Seeds, and G. R. Wilkinson. Double-beam infrared microspectrometer—249
Forsyth, D. M.
Brown, Charles R. and ——. Fusion of intermittent photic stimuli with alternating durations—866(TC*64*)
Fowler, H.
Cornsweet, T. N., ——, R. G. Rabedeau, R. E. Whalen, and D. R. Williams. Changes in the perceived color of very bright sources—283(TD*84*)
Fowles, G. R.
Shorthill, R. W. and ——. Interferometric measurements of isotope shifts in mercury II and mercury III with enriched isotopes—459
Franken, Peter A. Optical pumping—864(TB*33*)
Frankl, D. R. Some considerations regarding a method of abridged spectroradiometry—34
Franklin, S. G., H. R. Davidson, and Stewart Sease. MacAdam color-difference computor—281(TB*34*)
Fraser, R. D. B. Use of fiber specimens for infrared absorption measurements—1017(L)
Freese, F.
van Tongeren, W., ——, and E. H. S. van Someren, Editors. *Proceedings of the Sixth International Colloquium on Spectroscopy* (*Amsterdam, 1956*) (Book). Reviewed by Wallace R. Brode—359
Friedman, H.
Byram, E. T., T. A. Chubb, and ——. Evidence for water vapor at high altitudes from rocket measurements—282(TC*62*)
—— Russian satellite instrumentation for solar radiation measurements—282(TC*63*)
Fry, Glenn A.
—— Dichromatism and the mechanisms subserving color vision—509
—— Book review of *Principles of Perception* by S. Howard Bartley—670
Enoch, Jay M. and ——. Characteristics of a model retinal receptor studied at microwave frequencies—899
Fujisawa, Shin, Editor. *Photographic Sensitivity, Volume 2. Tokyo Symposium* (Book). Reviewed by Wallace R. Brode—860
Fujita, S.
Yoshinaga, H., ——, S. Minami, A. Mitsuishi, R. A. Oetjen, and Y. Yamada. Far infrared spectrograph for use from the prism spectral region to about 1-mm wavelength—315
Fuwa, K.
Baker, M. R., ——, R. E. Thiers, and B. L. Vallee. Spectral excitation in high-temperature flames as a function of sample flow—576(L)

Gamō, Hideya. Transformation of intensity matrix by the transmission of a pupil—136(L)
García-Riquelme, Olga. Lowest term of the $3d^{n-2}4s^2$ configuration, in the Ni III spectrum—183
Gates, David M.
——, **Clyde C. Shaw, and Donald Beaumont.** Infrared reflectance of evaporated metal films—88
—— Book review of *The Detection and Measurement of Infrared Radiation* by R. A. Smith, F. E. Jones, and R. P. Chasmar—198
——, **David G. Murcray, Clyde C. Shaw, and Robert J. Herbold.** Near infrared solar radiation measurements by balloon to an altitude of 100 000 feet—1010
Geiger, F. E., Jr. Spectroscopic isotope shift in lead II—302
Giardini, A. A. and Edward Poindexter. Stress-optical behavior of synthetic periclase (MgO)—556
Gibbons, Mathew G.
—— Wavelength dependence of the scattering coefficient for infrared radiation in natural haze—172
—— Radiation received by an uncollimated receiver from a 4π source—550
Gilfert, James C. and Dudley Williams. Pressure modulation of infrared absorption. I. Entire vibration-rotation bands—765
Gillott, H. F. *The Effect on Binocular Vision of Variations in the Relative Sizes and Levels of Illumination of the Ocular Images* (Book). Reviewed by Kenneth N. Ogle—198
Ginsburg, N.
Harned, Boyd W. and ——. Analysis of interference fringes from a flame—178
Glasser, L. G.
—— **and D. J. Troy.** Erratum: New high sensitivity differential colorimeter—276
——, **A. H. McKinney, C. D. Reilly, and P. D. Schnelle.** Cube-root color coordinate system—736
Glenn, W. E. New color projection system—281(TB*32*)/841
Gloersen, Per
Fastie, Wm. G., H. M. Crosswhite, and ——. Vacuum Ebert grating spectrometer—106
—— Electronic-recording, time-resolving spectrometer—712
Goetz, W. E. and N. J. Woodland. Automatic data reduction of spot diagram information—965
Goldberg, Leo. Observational approach to solar hydrodynamics—284(F*1*)
Golden, Joseph A. and Albert L. Myerson. Improved, single flash, continuum source for use below 2000 A—548
Gordon, J. M. Barium fluoride absorption cells for spectroscopy—583(L)
Gowing, D. M.
Schreckendgust, J. G. and ——. High-speed, direct-reading glossmeter—241

Graham, C. H.
Berger, Eda, ——, and Yun Hsia. Some visual functions of a unilaterally color-blind person. I. Critical fusion frequency in various spectral regions—614
Berger, Eda, ——, and Yun Hsia. Some visual functions of a unilaterally color-blind person. II. Binocular brightness matches in various spectral regions—622
Grau, Wolfgang, Editor. *Wörterbuch der Photo-, Film-, und Kinotechnik, 1 Band* (Book). Reviewed by Wallace R. Brode—1020
Gray, Arthur W. Necrology—74
Greenstein, Jesse L. Book review of *White Dwarfs* by E. Schatzman—584
Grigorovici, Radu and Ioana Aricescu-Savopol. Luminosity and chromaticity in the mesopic range—891

Hadley, L. N. Continuously variable multi-slit diffraction apparatus—286(FC*62*)
Hall, Joseph F., Jr. Reflection coefficient of optically inhomogeneous layers—654
Halperin, A. and N. Kristianpoller. Thermoluminescence spectra of x-ray colored KCl crystals—996
Hamasaki, Duco and Elwin Marg. Localized electroretinograms from the isolated retina of the frog—418
Hamilton, John F. Book review of *Die Photographische Empfindlichkeit* (*The Nature of Photographic Sensitivity*) by J. W. Mitchell—585
Hardy, Arthur C.
—— Frederic Ives Medalist for 1957—77
—— Reminiscences—82
Harker, George S. Interrelation of monocular and binocular acuities in the making of an equidistance judgment—233
Harned, Boyd W. and N. Ginsburg. Analysis of interference fringes from a flame—178
Harris, Franklin S., Jr.
Barnett, Dean J. and Franklin S. Harris, Jr. Effect of edge parameters in Fresnel diffraction of light at an infinite half-plane—872(SA*28*)
Harrison, George R., Neville Sturgis, Sumner P. Davis, and Yahiko Yamada. Production and testing of 10-inch diffraction gratings—287(FC*63*)
Hart, Philip J. Distribution of radiation from elliptical and parabolic mirrors—637
Harwit, Martin
Block, Myron J. and ——. Free surface of liquids as an optical element—480
Hass, Georg
—— **and James R. Jenness, Jr.** Method for fabricating paraboloidal mirrors—86
——, **J. B. Ramsey, and R. Thun.** Optical properties and structure of cerium dioxide films—324
—— Book review of *Vacuum Deposition of Thin Films* by L. Holland—504
Cox, J. T. and ——. Antireflection coatings for germanium and silicon in the infrared—677
—— **and Richard Tousey.** Reflecting coatings for the extreme ultraviolet—867(TD*71*)
Hatcher, Robert D.
Rohrbaugh, John H. and ——. Theory of the echelette grating. II—704
Rohrbaugh, John H., Charles Pine, William G. Zoellner, and ——. Theory of the echelette grating. III—710
Hately, G. F. and T. A. Littlefield. Isotope shift in the arc spectrum of zinc—851
Hause, C. D.
Mann, Glen A. and ——. Magnetic rotation of NO in the infrared—865(TB*45*)
Hebbard, Frederick W. Variation of physiological nystagmus with convergence—288(FD*84*)
Hemmendinger, Henry
Davidson, H. R. and ——. Colorant mixture computor—281(TB*33*)
Davidson, H. R. and ——. Comparison of Munsell and MacAdam color spaces—606
Henderson, B. D.
Cahn, Lee and ——. Performance of the Beckman DK spectrophotometer—380
Hendricks, Sterling B. Control of plant growth by radiation—280(T*1*)
Herbold, Robert J.
Gates, David M., David G. Murcray, Clyde C. Shaw, and ——. Near infrared solar radiation measurements by balloon to an altitude of 100 000 feet—1010
Herriott, Donald R.
—— Polyhedral satellite for more accurate measurement of orbit data of earth satellites—667(L)
Herriott, William and ——. Sinusoidal sweep-frequency targets for measurement of transfer function of photographic lenses—874(SB*50*)
—— Recording electronic lens bench—968
Herriott, William and Donald R. Herriott. Sinusoidal sweep-frequency targets for measurement of transfer function of photographic lenses—874(SB*50*)
Herscher, L. W., H. D. Ruhl, and N. Wright. Improved optical null infrared spectrophotometer—36
Herzberger, M. and E. Marchand. Fifth-order aberrations for systems with special properties—290(SB*31*)
Hexter, R. M. On the infrared absorption spectra crystalline brucite [$Mg(OH)_2$] and portlandite [$Ca(OH)_2$]—770
Hiedemann, E. A.
Barnes, James M., Walter G. Mayer, and ——. Multiple diffraction of light by ultrasonic vibrations in transparent solids—663
Higgins, G. C.
Lamberts, R. L., ——, and R. N. Wolfe. Measurement and analysis of the distribution of energy in optical images—487
Zweig, H. J., ——, and D. L. MacAdam. On the information-detecting capacity of photographic emulsions—926
Hillmann, Beverly M. Relationship between stimulus size and threshold intensity in the fovea measured at four exposure times—422
Hirschberg, J. G. and R. R. Kadesch. Synchronous wavelength sweep of a diffraction grating and Fabry-Perot interferometer—177
Hirt, R. C., R. G. Schmitt, N. D. Searle, and A. P. Sullivan. Ultraviolet spectral energy distributions of natural sunlight and accelerated test light sources—873(SB*45*)
Hisdal, B. Relative spectral energy distribution of standard light sources for colorimetry—608
Hochheimer, B. F. Optical method for high-temperature measurements—282(TC*64*)
Holland, F. H. Simultaneous converting automatic densitometer—863(TA*11*)
Holland, L. *Vacuum Deposition of Thin Films* (Book). Reviewed by Georg Hass—504
Holland, T. E. and W. C. Davis. Effects of elastic distortion of rotating mirrors on time resolution in smear cameras—365
Hornsby, Keith M. *Sensitometry in Practice* (Book). Reviewed by F. H. Perrin—670
Howe, William E. W. New lines in the spectra of zirconium—28
Hsia, Yun
Berger, Eda, C. H. Graham, and ——. Some visual functions of a unilaterally color-blind person. I. Critical fusion frequency in various spectral regions—614
Berger, Eda, C. H. Graham, and ——. Some visual functions of a unilaterally color-blind person. II. Binocular brightness matches in various spectral regions—622

Humphreys, Curtis J.
—— **and Edward Paul, Jr.** Extended observations of chlorine I between 10 000 and 20 000 A—285(FA*11*)
Paul, Edward, Jr., and ——. Newly observed lines of argon I and krypton I in the lead sulfide region—285(FA*12*)
Hunter, Richard S.
—— Description and measurement of white surfaces—597
—— Photoelectric color difference meter—985
Hunter, W. R.
Cox, J. T., J. E. Waylonis, and ——. Optical properties of evaporated zinc sulfide in the vacuum ultraviolet—281(TA*13*)
Hurvich, Leo M.
Jameson, Dorothea and ——. Subjective color scales and their dependence on adaptation and surround-to-test stimulus interrelations—866(TC*62*)
Huxford, Walter S. Necrology—673

Ingersoll, Leonard R.
—— **and D. H. Liebenberg.** Faraday effect in gases and vapors. III—339
—— Necrology—674
Ingle, George W. Accuracy of tristimulus computations—761(L)

Jameson, Dorothea and Leo M. Hurvich. Subjective color scales and their dependence on adaptation and surround-to-test stimulus interrelations—866(TC*62*)
Jenkins, F. A.
Baumeister, P. W., ——, and M. A. Jeppesen. Characteristics of the phase-dispersion interference filter—280(TA*12*)
—— Book review of *Geometrical and Physical Optics* by R. S. Longhurst—431
Jenness, James R., Jr.
Hass, Georg and ——. Method for fabricating paraboloidal mirrors—86
Jensen, John C. Necrology—278
Jeppesen, Myron A.
Baumeister, P. W., F. A. Jenkins, and ——. Characteristics of the phase-dispersion interference filter—280(TA*12*)
—— Some optical, thermo-optical, and piezo-optical properties of synthetic sapphire—629
Johnson, Irving and Charles E. Campbell. Detection of free radicals in a shock tube by absorption spectroscopy—865(TB*41*)
Johnson, John C.
Eldridge, Ralph G. and ——. Diffuse transmission through real atmospheres—463
Jones, F. E.
Smith, R. A., ——, and R. P. Chasmar. *The Detection and Measurement of Infrared Radiation* (Book). Reviewed by David M. Gates—198
Jones, R. Clark
—— On the minimum energy detectable by photographic negatives—874(SB*49*)
—— On the point and line spread functions of photographic images—934
Judd, Deane B.
Keegan, H. J., W. C. Rheinboldt, J. C. Schleter, J. P. Menard, and ——. Digital reduction of spectrophotometric data to Munsell renotations—863(TA*14*)
Schleter, J. C., ——, and H. J. Keegan. Extension of the Munsell renotation system—863(TA*15*)
—— Some demonstrations I have shown—869(F*1*)
Juenker, D. W. and E. W. Parsons. Ultraviolet transmission properties of conducting coatings on glass—857(L)
Jursa, A. S.
Tanaka, Y., ——, and F. J. LeBlanc. Continuous emission spectra of rare gases in the vacuum ultraviolet region. II. Neon and helium—304

Kadesch, R. R.
Hirschberg, J. G. and ——. Synchronous wavelength sweep of a diffraction grating and Fabry-Perot interferometer—177
Kagarise, R. E. and J. W. Mayfield. Simple interferometer for dispersion measurements of liquids in the 2–22 μ region—430(L)
Kahl, G. D. and D. B. Sleator. Spectral effects in interferometry—525
Kallmann, H. and J. Rennert. Application of inorganic phosphors to infrared photography—812
Kapany, N. S.
Keim, R. E. and ——. Image synthesis and lens response using spot diagrams—351
—— Role of optical insulation in fiber optics—870(FB*41*)
—— **and W. A. Overheim.** Microwave analogs of fiber optics—870(FB*42*)
—— **and D. A. Pontarelli.** On dielectric cylinder photorefractometer—870(FB*43*)
Kaufman, V.
Meissner, K. W. and ——. High-order interference—872(SA*25*)
Keegan, Harry J.
—— Colorimetry from precision spectrophotometry—281(TB*31*)
——, **W. C. Rheinboldt, J. C. Schleter, J. P. Menard, and Deane B. Judd.** Digital reduction of spectrophotometric data to Munsell renotations—863(TA*14*)
Schleter, J. C., Deane B. Judd, and ——. Extension of the Munsell renotation system—863(TA*15*)
Keim, R. E. and N. S. Kapany. Image synthesis and lens response using spot diagrams—351
Kelley, Frank. New recording spectroreflectometer for measurements in the ultraviolet, visible, and near-infrared regions—289(SA*13*), 670(E)
Kelly, D. H., M. E. Lynch, and D. S. Ross. Improved sinusoidal test charts—858(L)
Kessler, K. G.
—— **and W. A. Wildhack.** Automation and optics—871(SA*12*)
Bass, Arnold M. and ——. Large-aperture grating spectrograph utilizing camera components—871(SA*22*)
King, Thomas A.
Rodney, William S., Irving H. Malitson, and ——. Refractive index of arsenic trisulfide—633
Kinney, Jo Ann Smith. Comparison of scotopic, mesopic, and photopic spectral sensitivity curves—185
Knestrick. G. L.
Curcio, J. A. and ——. Correlation of atmospheric transmission with backscattering—686
Koehler, W. F.
—— Multiple-beam fringes of equal chromatic order. Part VIII. Method of coincidence—55
——, **F. K. Odencrantz, and W. C. White.** Optical constants of evaporated selenium films—281(TA*14*)
Koester, Charles J. Phase shift effects in fringes of equal chromatic order—255
Kolb, A. C. Atomic spectra in high-temperature shock tubes—284(F*3*)
Kornstein, E.
—— **and E. L. O'Neill.** Comparison of methods for combining lens-film response curves—873(SB*47*)
—— **and E. L. O'Neill.** Statistical considerations of several models of photographic grain—873(SB*48*)
Krauskopf, J., T. N. Cornsweet, and L. A. Riggs. Analysis of saccadic eye movements during monocular and binocular fixation—288(FD*86*)
Kristianpoller, N.
Halperin, A. and ——. Thermoluminescence spectra of x-ray colored KCl crystals—996

Kunz, Joseph F.
Brewster, Gordon F., ——, and Joseph L. Rood. Dispersion of some optical glasses in the visible and infrared—534
Kurtz, Henry F. Necrology—361

Laikin, Milton. Automatic ray tracing using the IBM 704—666(L)
Lamberts, Robert L.
—— Measurement of sine-wave response and spread functions of photographic emulsions—290(SB*33*)
——, **G. C. Higgins, and R. N. Wolfe.** Measurement and analysis of the distribution of energy in optical images—487
—— Relationship between the sine-wave response and the distribution of energy in the optical image of a line—490
Lamport, Harold. Average distribution of light flux by a narrow slit vibrating in amplitude-modulated harmonic motion—760(L)
Land, Edwin H. On the nature of color in the image situation—865(TC*51*)
Lasser, M. E., P. Cholet, and E. C. Wurst, Jr. High-sensitivity crystal infrared detectors—468
Laufer, Jerome S.
Nimeroff, I. and ——. Spectral band-pass determinations by a dynamic approach—864(TA*17*)
Leacock, J. A.
Boll, R. H., ——, G. C. Clark, and S. W. Churchill. *Light-Scattering Functions* (Book). Reviewed by Wallace R. Brode—671
LeBlanc, F. J.
Tanaka, Y., A. S. Jursa, and ——. Continuous emission spectra of rare gases in the vacuum ultraviolet region. II. Neon and helium—304
Leftwich, Richard, Henry Miserocchi, and Stanley Dolin. Series of controlled infrared blackbody radiation sources—289(SA*12*)
Lehmann, Willi. Electroluminescence of zinc sulfide phosphors as an equilibrium process—647
Lempicki, A. Analysis of excitation spectra measurement—67
Les Laboratoires d'Electronique et Physique Appliquée. *Acta Electronica, Volume 2, Nos. 1–2 (1957–1958)* (Book). Reviewed by W. T. Wintringham—671
Lessing, N. v. d. W.
—— Further considerations on the selection of optical glasses in apochromats—269
—— Selection of optical glasses in Taylor Triplets (special method)—558
Levi, Leo
—— On the effect of granularity on dynamic range and information content of photographic recordings—9, 276(E)
—— Accurate method for correction of slant range distortion in high-altitude radars and a contribution to the optics of reflecting conical surfaces—680
Lewin, L. Stigmatic lenses—500(L)
Liebenberg, D. H.
Ingersoll, L. R. and ——. Faraday effect in gases and vapors. III—339
Lindner, John W. and Sumner P. Davis. Zeeman effect data for the spectra of erbium—542
Littlefield, T. A.
Hately, G. F. and ——. Isotope shift in the arc spectrum of zinc—851
Longhurst, R. S. *Geometrical and Physical Optics* (Book). Reviewed by F. A. Jenkins—431
Lowen, Herbert
Back, Frank G. and ——. Generalized theory of Zoomar systems—149
Lowry, Earl M. and James J. DePalma. Quantitative relation between chromaticity differences and luminance differences—820
Ludvigh, Elek and James W. Miller. Study of visual acuity during the ocular pursuit of moving test objects. I. Introduction—799
Luria, S. M. Absolute threshold for extremely wide fields—884
Lynch, M. E.
Kelly, D. H., ——, and D. S. Ross. Improved sinusoidal test charts—858(L)

MacAdam, David L.
—— Continuously recording spectroradiometer—832
Zweig, H. J., G. C. Higgins, and ——. On the information-detecting capacity of photographic emulsions—926
—— Book review of *The Measurement of Colour* by W. D. Wright—1020
Mackworth, J. F. and N. H. Mackworth. Eye fixations recorded on changing visual scenes by the television eye-marker—439
Mackworth, N. H.
Mackworth, J. F. and ——. Eye fixations recorded on changing visual scenes by the television eye-marker—439
MacLennan, A. P.
Randall, H. M., ——, and D. W. Smith. Infrared spectroscopy in the field of tuberculosis—869(FA*22*)
Macmillan, Duncan
Melvin, Eugene H. and ——. Two-compartment hollow prism—581(L)
Mahan, A. I.
——, **C. V. Bitterli, and Carol G. Wein.** Two-dimensional optical approach to the boresight error problem—290(SB*34*)
——, **C. V. Bitterli, and C. G. Wein.** Boresight error properties of a two-dimensional wedge—874(SB*52*)
Mahneke, Axel
Berger, Curt, ——, and Otto Mortensen. Electronic multiflash generator for experiments in psychophysiological optics—191
Maissel, Leon. Stark effect in argon II—853
Malitson, Irving H.
——, **Frederick V. Murphy, Jr., and William S. Rodney.** Refractive index of synthetic sapphire—72(L)
Rodney, William S., ——, and Thomas A. King. Refractive index of arsenic trisulfide—633
Mann, Alfred E. and Frank C. Rock, Jr. Wedged ultra-narrow interference filter for a high-resolution rapid-scanning spectroradiometer—280(TA*11*)
Mann, Glen A. and C. D. Hause. Magnetic rotation of NO in the infrared—865(TB*45*)
Mansberg, H. P. Flying-spot microscope measurement systems—874(SB*51*)
Marchand, Erich W.
Herzberger, M. and ——. Fifth-order aberrations for systems with special properties—290(SB*31*)
—— Flux through a slit vibrating sinusoidally—760(L)
Marg, Elwin
Hamasaki, Duco and ——. Localized electroretinograms from the isolated retina of the frog—418
Margoshes, Marvin and Bourdon F. Scribner. Characteristics of the plasma jet spectroscopic source—865(TB*42*)
Markowitz, William. Photographic zenith tube and dual-rate moon camera—282(T*51*)
Marshall, H. W., E. H. Siegler, and Van Zandt Williams. Infrared instrumentation and apparatus—871(SA*11*)
Martin, William C. and Charles H. Corliss. Energy levels and spectrum of single ionized iodine (I II)—865(TB*44*)
Mayer, Walter G.
Barnes, James M., ——, and E. A. Hiedemann. Multiple diffraction of light by ultrasonic vibrations in transparent solids—663

Mayfield, J. W.
Kagarise, R. E. and ——. Simple interferometer for dispersion measurements of liquids in the 2–22 μ region—430(L)
McCubbin, T. K., Jr.
Rank, D. H. and ——. Refractivity of air in the infrared—285(FA*13*)
Rank, D. H., G. D. Saksena, and ——. Refractivity of air in the visible and near ultraviolet—285(FA*14*)
Rank, D. H., G. D. Saksena, and ——. Measurements of the dispersion of air from 3651 to 15 300 angstroms—455
McKinney, A. H.
Glasser, L. G., ——, C. D. Reilly, and P. D. Schnelle. Cube-root color coordinate system—736
McLane, J. T. Critique on the calculation of the quality factors for filters—276(L)
McManus, George M.
Faucher, Joseph A., ——, and Hans J. Trurnit. Simplified treatment of ellipsometry—51
McQuistan, Richmond B. On an approximation to sinusoidal modulation—63, 431(E)
Meissner, K. W.
Barger, R. L. and ——. Mercury atomic beam lamp—22
Andrew, K. L. and ——. New germanium standard wavelengths in the region from 1998 A to 1630 A—31
—— and V. Kaufman. High-order interference—872(SA*25*)
——, R. D. VanVeld, and P. G. Wilkinson. Germanium standard wavelengths in the vacuum ultraviolet—1001
Melvin, Eugene H. and Duncan Macmillan. Two-compartment hollow prism—581(L)
Menard, J. P.
Keegan, H. J., W. C. Rheinboldt, J. C. Schleter, ——, and Deane B. Judd. Digital reduction of spectrophotometric data to Munsell renotations—863(TA*14*)
Rheinboldt, W. C. and ——. Mechanized conversion of colorimetric data to Munsell renotations—864(TA*16*)
Mergerian, D. Optical properties of infrared materials at elevated temperatures—868(TD*85*)
Miller, James W.
Ludvigh, Elek and ——. Study of visual acuity during the ocular pursuit of moving test objects. I. Introduction—799
—— Study of visual acuity during the ocular pursuit of moving test objects. II. Effects of direction of movement, relative movement, and illumination—803
Miller, N. D. and V. J. Carpenter. Effect of viewing conditions on observer accuracy using stereoplotting equipment—866(TC*65*)
Miller, O. E.
Sant, A. J. and ——. Instrument for selecting visually neutral photographic dye images—4
—— and A. J. Sant. Incomplete integrating sphere—287(FC*64*)/828
—— and A. J. Sant. Portable telescopic visual colorimeter—474
Minami, S.
Yoshinaga, H., S. Fujita, ——, A. Mitsuishi, R. A. Oetjen, and Y. Yamada. Far infrared spectrograph for use from the prism spectral region to about 1-mm wavelength—315
Minkoff, G. J. and F. I. Scherber. Suppression of bubbling in boiling refrigerants as an aid in optical measurements—358(L)
Miserocchi, Henry
Leftwich, Richard, ——, and Stanley Dolin. Series of controlled infrared blackbody radiation sources—289(SA*12*)
Mitchell, J. W. *Die Photographische Empfindlichkeit* (*The Nature of Photographic Sensitivity*) (Book). Reviewed by John F. Hamilton—585
Mitra, Shashanka S.
Wood, Darwin L. and ——. Effect of convergence on the infrared spectra of anisotropic substances—537
Mitsuishi, A.
Yoshinaga, H., S. Fujita, S. Minami, ——, R. A. Oetjen, and Y. Yamada. Far infrared spectrograph for use from the prism spectral region to about 1-mm wavelength—315
Miyamoto, Kenrō
—— On a comparison between wave optics and geometrical optics by using Fourier analysis. I. General theory—57
—— Comparison between wave optics and geometrical optics using Fourier analysis. II. Astigmatism, coma, spherical aberration—567
Morris, R. H. Preparation of color-wedged film samples for use in a neutral selector—225
Mortensen, Otto
Berger, Curt, Axel Mahneke, and ——. Electronic multiflash generator for experiments in psychophysiological optics—191
Murcray, David G.
Gates, David M., ——, Clyde C. Shaw, and Robert J. Herbold. Near infrared solar radiation measurements by balloon to an altitude of 100 000 feet—1010
Murphy, Frederick V., Jr.
Malitson, Irving H., ——, and William S. Rodney. Refractive index of synthetic sapphire—72(L)
Myerson, Albert L.
Golden, Joseph A. and ——. Improved, single flash, continuum source for use below 2000 A—548

Nachmias, Jacob. Brightness and visual acuity with intermittent illumination—726
Nathan, Alan M. Polarization technique for improving visibility in fog and haze—285(FB*32*)
Nelson, R. C.
—— Energy transfers between crystals and adsorbed dyes. I. Desensitization—1
—— Energy transfers between crystals and adsorbed dyes. II. Effect of concentration on efficiency of sensitization—948
Newhall, S. M.
——, R. W. Burnham, and R. M. Evans. Effects of shadowing on surface-color perceptions—283(TD*81*)
——, R. W. Burnham, and R. M. Evans. Color constancy in shadows—976
Nicholls, R. W.
Reeves, E. M. and ——. Simple and inexpensive *f*/1.1 prism spectrograph—358(L)
Nimeroff, I. and Jerome S. Laufer. Spectral band-pass determinations by a dynamic approach—864(TA*17*)
Noble, R. H.
Rainwater, C. S. and ——. Index of refraction of fused silica in the ultraviolet—868(TD*89*)
Nonaka, Mamoru. Method for the measurement of the total flux of a fluorescent lamp—246
Nooh, H.
Barakat, N. and ——. Principle of an interference refractometer—90

Oberheim, W. A.
Kapany, N. S. and ——. Microwave analogs of fiber optics—870(FB*42*)
O'Brien, Vivian. Contour perception, illusion and reality—112
Odencrantz, F. K.
Koehler, W. F., ——, and W. C. White. Optical constants of evaporated selenium films—281(TA*14*)
Oetjen, R. A.
Yoshinaga, H., S. Fujita, S. Minami, A. Mitsuishi, —— and Y. Yamada. Far infrared spectrograph for use from the prism spectral region to about 1-mm wavelength—315
Ogilvie, John C. and Maurice M. Taylor. Effect of orientation on the visibility of fine wires—628

Ogle, Kenneth N.
—— Book review of *The Effect on Binocular Vision of Variations in the Relative Sizes and Levels of Illumination of the Ocular Images* by H. F. Gillott—198
—— Note on steroscopic acuity and observation distance—287(FD*82*)/794
Ogura, Iwao. Asymptotic behavior of the response function of optical systems—579(L)
O'Hara, Margaret
Feldman, Charles and ——. Luminescent phases in willemite films—816
Ohlmann, R. C., P. L. Richards, and M. Tinkham. Far infrared transmission through metal light pipes—531
Olson, O. H.
Pontarelli, D. A., R. B. Wise, and ——. Mark sensing in optical computations—502(L)
O'Neill, Edward L.
Kornstein, E. and ——. Comparison of methods for combining lens-film response curves—873(SB*47*)
Kornstein, E. and ——. Statistical considerations of several models of photographic grain—873(SB*48*)
—— Graininess and entropy—945
Osterberg, Harold. Propagation of plane electromagnetic waves in inhomogeneous media—513

Packer, Lester. Apparatus for recording small changes in light transmission in turbid suspensions—503(L)
Papadopoulos, V. M. Ray tracing through a lens of circular cross section—667(L)
Parsons, E. W.
Juenker, D. W. and ——. Ultraviolet transmission properties of conducting coatings on glass—857(L)
Paul, Edward, Jr.
Humphreys, Curtis J. and ——. Extended observations of chlorine I between 10 000 and 20 000 A—285(FA*11*)
—— **and Curtis J. Humphreys.** Newly observed lines of argon I and krypton I in the lead sulfide region—285(FA*12*)
Peck, Edson R.
Schlueter, Donald J. and ——. Refractivity of air in the near infrared—313
Peiser, H. Steffen. Book review of *The Powder Method in X-Ray Crystallography* by Leonid V. Azároff and Martin J. Buerger—583
Penndorf, Rudolf B. Interpolation methods for angular Mie scattering coefficients—872(SB*41*)
Perrin, F. H. Book review of *Sensitometry in Practice* by Keith M. Hornsby—670
Peters, C. W.
Church, C. H. and ——. Electric field induced infrared absorption of H_2 and D_2—865(TB*43*)
Pine, Charles
Rohrbaugh, John H., ——, William G. Zoellner, and Robert D. Hatcher. Theory of the echelette grating. III—710
Plass, Gilbert N.
—— Models for spectral band absorption—690
—— Atmospheric infrared absorption for various band absorption models—872(SB*42*)
Plyler, Earle K. and Nicolo Acquista. Transmitance and reflectance of cesium iodide in the far infrared region—668(L)
Plymale, William S., Jr. Necrology—673
Poindexter, Edward
Giardini, A. A. and ——. Stress-optical behavior of synthetic periclase (MgO)—556
Pontarelli, D. A.
Appel, A. V. and ——. Infrared polariscope for photoelastic measurements of semiconductors—289(SA*11*)
——, **R. B. Wise, and O. H. Olson.** Mark sensing in optical computations—502(L)
Kapany, N. S. and ——. On dielectric cylinder photorefractometer—870(FB*43*)
Post, Daniel. Multiple-beam fringe sharpening with the Series Interferometer—309
Preisendorfer, Rudolph W. Some practical consequences of the asymptotic radiance theorem—873(SB*46*)
Price, W. C.
Ford, M. A., ——, W. E. Seeds, and G. R. Wilkinson. Double-beam infrared microspectrometer—249
Primak, William. Fringe sharpening in divided beam interferometers—375
Pursley, William K. Necrology—435
Purves, Frederick, Editor. *The Focal Encyclopedia of Photography* (Book). Reviewed by Wallace R. Brode—277

Quesada, Antonio
Carpenter, Robert O'B., Julia A. Wight, ——, and Richard E. Swing. Predicting infrared molecular attenuation for long slant paths in the upper atmosphere—285(FB*31*)

Rabedeau, R. G.
Cornsweet, T. N., H. Fowler, ——, R. E. Whalen, and D. R. Williams. Changes in the perceived color of very bright sources—283(TD*84*)
Rainwater, C. S. and R. H. Noble. Index of refraction of fused silica in the ultraviolet—868(TD*89*)
Ramsey, J. B.
Hass, G., ——, and R. Thun. Optical properties and structure of cerium dioxide films—324
Randall, H. M., A. P. MacLennan, and D. W. Smith. Infrared spectroscopy in the field of tuberculosis—869(FA*22*)
Rank, D. H.
—— **and T. K. McCubbin.** Refractivity of air in the infrared—285(FA*13*)
——, **G. D. Saksena, and T. K. McCubbin.** Refractivity of air in the visible and near ultraviolet—285(FA*14*)
——, **G. D. Saksena, and T. K. McCubbin, Jr.** Measurements of the dispersion of air from 3651 to 15 300 angstroms—455
——, **G. D. Saksena, and T. A. Wiggins.** Shape of an emission line of CH produced in an oxyacetylene flame—521
Ratliff, Floyd. Stationary retinal image requiring no attachments to the eye—274(L)
Rayces, J. L. Formation of axicon images—576(L)
Reeves, E. M. and R. W. Nicholls. Simple and inexpensive *f*/1.1 prism spectrograph—358(L)
Reilly, C. D.
Glasser, L. G., A. H. McKinney, ——, and P. D. Schnelle. Cube-root color coordinate system—736
Reiss, Max. Note on thin-lens color correction for variable focal-length lenses—578(L)
Rennert, J.
Kallmann, H. and ——. Application of inorganic phosphors to infrared photography—812
Renshaw, Samuel. Effect of stereoimage decentration on apparent size—790
Rheinboldt, W. C.
Keegan, H. J., ——, J. C. Schleter, J. P. Menard, and Deane B. Judd. Digital reduction of spectrophotometric data to Munsell renotations—863(TA*14*)
—— **and J. P. Menard.** Mechanized conversion of colorimetric data to Munsell renotations—864(TA*16*)
Richards, P. L.
Ohlmann, R. C., ——, and M. Tinkham. Far infrared transmission through metal light pipes—531
Richardson, W. H.
Tyler, John E. and ——. Nephelometer for the measurement of volume scattering function *in situ*—354

Riggs, L. A.
Krauskopf, J., T. N. Cornsweet, and ——. Analysis of saccadic eye movements during monocular and binocular fixation—288(FD*86*)
Robinson, Charles F. Book review of *Mass Spectroscopy* by H. E. Duckworth—584
Robson, J. G.
Campbell, F. W., G. Westheimer, and ——. Significance of fluctuations of accommodation—669(L)
Rock, Frank C., Jr.
Mann, Alfred E. and ——. Wedged ultra-narrow interference filter for a high-resolution rapid-scanning spectroradiometer—280(TA*11*)
Rodney, William S.
Malitson, Irving H., Frederick V. Murphy, Jr., and ——. Refractive index of synthetic sapphire—72(L)
—— and E. Djurle. Infrared phase-contrast refractometer—388
——, Irving H. Malitson, and Thomas A. King. Refractive index of arsenic trisulfide—633
Rohrbaugh, John H.
—— and Robert D. Hatcher. Theory of the echelette grating. II—704
——, Charles Pine, William G. Zoellner, and Robert D. Hatcher. Theory of the echelette grating. III—710
Romick, G. J.
Clark, K. C. and ——. New meridian auroral spectrograph—871(SA*23*)
Ronchi, Lucia. On the electrical response of the human eye to red stimuli of different time distribution of luminance—437
Rood, Joseph L.
Brewster, Gordon F., Joseph F. Kunz, and ——. Dispersion of some optical glasses in the visible and infrared—534
Rosenberg, B. Photoconductivity and the visual receptor process—581(L)
Ross, D. S.
Kelly, D. H., M. E. Lynch, and ——. Improved sinusoidal test charts—858(L)
Roth, Walter. Vacuum ultraviolet continuum emission in neon—1018(L)
Rudolph, Hellmuth and Hermann Bluemel. Series of thin film ellipsometers—868(TD*83*)
Ruhl, H. D.
Herscher, L. W., ——, and N. Wright. Improved optical null infrared spectrophotometer—36
Rustgi, O. P.
Walker, W. C., J. A. R. Samson, and ——. Optical properties of Al for $h\nu$ between 10 and 26 ev—71(L)
Walker, W. C., ——, and G. L. Weissler. Optical transmission of evaporated In, Sn, and Bi films in the vacuum ultraviolet—1017(L)
Rydz, J. S. Colorimetric considerations of a color electrofax process—863(TA*12*)

Saksena, G. D.
Rank, D. H., ——, and T. K. McCubbin. Refractivity of air in the visible and near ultraviolet—285(FA*14*)
Wiggins, T. A. and ——. Dispersion of a double-pass spectrograph—429(L)
Rank, D. H., ——, and T. K. McCubbin, Jr. Measurements of the dispersion of air from 3651 to 15 300 angstroms—455
Rank, D. H., ——, and T. A. Wiggins. Shape of an emission line of CH produced in an oxyacetylene flame—521
Salzberg, Calvin D. and John J. Villa. Index of refraction of germanium—579(L)
Samson, J. A. R.
Walker, W. C., ——, and O. P. Rustgi. Optical properties of Al for $h\nu$ between 10 and 26 ev—71(L)
Sanders, C. L. and G. Wyszecki. L/Y ratios in terms of CIE-chromaticity coordinates—389
Sandvik, Otto. Necrology—74, 200
Sanford, B. P. Measurement of the optical constants of thin dielectric films by means of frustrated total reflection—482
Sant, A. J.
—— and O. E. Miller. Instrument for selecting visually neutral photographic dye images—4
Miller, O. E. and ——. Incomplete integrating sphere—287(FC*64*)/828
Miller, O. E. and ——. Portable telescopic visual colorimeter—474
Sato, Masako
Taguti, Ryuzabro Taguti and ——. Examination of perceptions of reproduced colors in the N.T.S.C. color television system—866(TC*63*)
Sauer, Roger L. Nondestructive interferometric thickness measurement of thin transparent films—275(L)
Saxton, James H. Aluminum-nickel mirror—583(L)
Schatzman, E. *White Dwarfs* (Book). Reviewed by Jesse L. Greenstein—584
Scherber, F. I.
Minkoff, G. J. and ——. Suppression of bubbling in boiling refrigerants as an aid in optical measurements—358(L)
Schleter, J. C.
Keegan, H. J., W. C. Rheinboldt, ——, J. P. Menard, and Deane B. Judd. Digital reduction of spectrophotometric data to Munsell renotations—863(TA*14*)
——, Deane B. Judd, and H. J. Keegan. Extension of the Munsell renotation system—863(TA*15*)
Schlueter, Donald J. and Edson R. Peck. Refractivity of air in the near infrared—313
Schmitt, R. G.
Hirt, R. C., R. G. Schmitt, N. D. Searle, and A. P. Sullivan. Ultraviolet spectral energy distributions of natural sunlight and accelerated test light sources—873(SB*45*)
Schnelle, P. D.
Glasser, L. G., A. H. McKinney, C. D. Reilly, and ——. Cube-root color coordinate system—736
Schreckendgust, J. G. and D. M. Gowing. High-speed, direct-reading glossmeter—241
Schultze, W. *Farbenlehre und Farbmessung, Eine Kurze Einführung* (Book). Reviewed by Günter Wyszecki—583
Scott, G. David. Obtaining low orders of interference in measuring film thicknesses by multiple beam interferometry—858(L)
Scribner, Bourdon F.
Margoshes, Marvin and ——. Characteristics of the plasma jet spectroscopic source—865(TB*42*)
Searle, N. D.
Hirt, R. C., R. G. Schmitt, ——, and A. P. Sullivan. Ultraviolet spectral energy distributions of natural sunlight and accelerated test light sources—873(SB*45*)
Sease, Stewart
Franklin, S. G., H. R. Davidson, and ——. MacAdam color-difference computor—281(TB*34*)
Seeds, W. E.
Ford, M. A., W. C. Price, ——, and G. R. Wilkinson. Double-beam infrared microspectrometer—249
Shaw, Clyde C.
Gates, David M., ——, and Donald Beaumont. Infrared reflectance of evaporated metal films—88
—— Method for the measurement of the spectral and angular dependence of emissivity in metals—868(TD*86*)
Gates, David M., David G. Murcray, ——, and Robert J. Herbold. Near infrared solar radiation measurements by balloon to an altitude of 100 000 feet—1010

Sheard, Charles. Edgar D. Tillyer Medalist for 1957—205
Shorthill, R. W. and G. R. Fowles. Interferometric measurements of isotope shifts in mercury II and mercury III with enriched isotopes—459
Siegler, E. Horace, Jr.
—— **and George S. Stanford.** Use of off-axis ellipsoids as optical elements—289(SA*14*)
Marshall, H. W., ——, and Van Zandt Williams. Infrared instrumentation and apparatus—871(SA*11*)
Silvernail, Chester J. Novel interferometer—286(FC*61*)
Simmons, Frederick S. and Arthur G. DeBell. Photographic technique for measuring temperatures in luminous rocket exhaust flames—717
Simons, David G.
Duntley, Seibert Q. and ——. Luminance of the horizon sky at high altitudes—282(TC*61*)
Duntley, Seibert Q., Almerian R. Boileau, and ——. Photometry of the sky at high altitudes—873(SB*43*)
Slater, P. N. and W. Weinstein. Light transmitted by very small pinholes—146
Sleator, D. B.
Kahl, G. D. and ——. Spectral effects in interferometry—525
Smartt, R. N. and W. H. Steel. Birefringence of quartz and calcite—868(TD*88*)
Smith, Abbott and David Dutton. Behavior of lead sulfide photocells in the ultraviolet—1007
Smith, D. S.
Baird, K. M. and ——. Preliminary measurements of some wavelengths of krypton 86 and mercury 198 lines—300
Smith, D. W.
Randall, H. M., A. P. MacLennan, and ——. Infrared spectroscopy in the field of tuberculosis—869(FA*22*)
Smith, R. A., F. E. Jones, and R. P. Chasmar. *The Detection and Measurement of Infrared Radiation* (Book). Reviewed by David M. Gates—198
Smith, S. D. Design of multilayer filters by considering two effective interfaces—43
Smith, Warren J. Control of residual aberrations in the design of anastigmat objectives—98
Snyder, D. D.
Bleil, C. E. and ——. Luminescence of CdS crystals at room temperature under intense irradiation—868(TD*87*)
Spencer, Domina Eberle
—— Fog on runways, a preliminary report—286(FB*33*)
—— Fog on turnpikes, a preliminary report—286(FB*34*)
Sperling, H. G. Psychophysical study of a case of congenital tritanopia—284(TD*87*)
Speyer, Edward. Testing low-precision optics—953
Stakutis, Vincent J.
Toolin, Robert B. and ——. Qualitative indication of nadir sky blue—71(L)
Stanford, George S.
Siegler, E. Horace, Jr., and ——. Use of off-axis ellipsoids as optical elements—289(SA*14*)
Steel, W. H.
Smartt, R. N. and ——. Birefringence of quartz and calcite—868(TD*88*)
Stevens, G. W. W. *Microphotography—Photography at Extreme Resolution* (Book). Reviewed by Lloyd E. Varden—671
Stevens, J. C.
Stevens, S. S. and ——. Dependence of brightness on luminance—287(FD*81*)
Stevens, S. S. and J. C. Stevens. Dependence of brightness on luminance—287(FD*81*)
Stroke, George W. Erratum: Photoelectric fringe signal information and range in interferometers with moving mirrors—276
Stultz, K. F. and H. J. Zweig. Relation of graininess and granularity for black-and-white samples with nonuniform granularity spectrum—283(TD*82*), 670(E)
Sturgis, Neville
Harrison, George R., ——, Sumner P. Davis, and Yahiko Yamada. Production and testing of 10-inch diffraction gratings—287(FC*63*)
Sullivan, A. P.
Hirt, R. C., R. G. Schmitt, N. D. Searle, and ——. Ultraviolet spectral energy distributions of natural sunlight and accelerated test light sources—873(SB*45*)
Sussman, M. Note on perfect Lambertian diffusers—275(L)
Swing, Richard E.
Carpenter, Robert O'B., Julia A. Wight, Antonio Quesada, and ——. Predicting infrared molecular attenuation for long slant paths in the upper atmosphere—285(FB*31*)

Taguti, Ryuzabro Taguti and Masako Sato. Examination of perceptions of reproduced colors in the N.T.S.C. color television system—866(TC*63*)
Tanaka, Y., A. S. Jursa, and F. J. LeBlanc. Continuous emission spectra of rare gases in the vacuum ultraviolet region. II. Neon and helium—304
Taylor, C. A. and B. J. Thompson. Attempt to investigate experimentally the intensity distribution near the focus in the error-free diffraction patterns of circular and annular apertures—844
Taylor, Maurice M.
Ogilvie, John C. and ——. Effect of orientation on the visibility of fine wires—628
Thekaekara, M. Automatic techniques in spectroscopy using a small computer—871(SA*21*)
Thiers, R. E.
Baker, M. R., K. Fuwa, ——, and B. L. Vallee. Spectral excitation in high-temperature flames as a function of sample flow—576(L)
Thompson, B. J.
—— Illustration of the phase change in two-beam interference with partially coherent light—95
Taylor, C. A. and ——. Attempt to investigate experimentally the intensity distribution near the focus in the error-free diffraction patterns of circular and annular apertures—844
Thun, R.
Hass, G., J. B. Ramsey, and ——. Optical properties and structure of cerium dioxide films—324
Tinkham, M.
Ohlmann, R. C., P. L. Richards, and ——. Far infrared transmission through metal light pipes—531
Toolin, Robert B. and Vincent J. Stakutis. Qualitative indication of nadir sky blue—71(L)
Tousey, Richard
Hass, Georg and ——. Reflecting coatings for the extreme ultraviolet—867(TD*71*)
Trees, Richard E. Comparison of first, second, and third approximations in Bacher and Goudsmit's theory of atomic spectra—293
Troy, D. J.
Glasser, L. G. and ——. Erratum: New high sensitivity differential colorimeter—276
Trurnit, Hans J.
Faucher, Joseph A., George M. McManus, and ——. Simplified treatment of ellipsometry—51
Tyler, John E. and W. H. Richardson. Nephelometer for the measurement of volume scattering function *in situ*—354

Vallee, B. L.
Baker, M. R., K. Fuwa, R. E. Thiers, and ——. Spectral excitation in high-temperature flames as a function of sample flow—576(L)

van Someren, E. H. S.
van Tongeren, W., F. Freese, and ——, Editors. *Proceedings of the Sixth International Colloquium on Spectroscopy (Amsterdam, 1956)* (Book). Reviewed by Wallace R. Brode—359
van Tongeren, W., F. Freese, and E. H. S. van Someren, Editors. *Proceedings of the Sixth International Colloquium on Spectroscopy (Amsterdam, 1956)* (Book). Reviewed by Wallace R. Brode—359
VanVeld, R. D.
Meissner, K. W., ——, and P. G. Wilkinson. Germanium standard wavelengths in the vacuum ultraviolet—1001
Varden, Lloyd E. Book review of *Microphotography—Photography at Extreme Resolution* by G. W. W. Stevens—671
Veringa, F. On some properties of nonthreshold flicker—500(L)
Villa, John J.
Salzberg, Calvin D. and ——. Index of refraction of germanium—579(L)

Walker, W. C.
——, J. A. R. Samson, and O. P. Rustgi. Optical properties of Al for $h\nu$ between 10 and 26 ev—71(L)
——, O. P. Rustgi, and G. L. Weissler. Optical transmission of evaporated In, Sn, and Bi films in the vacuum ultraviolet—1017(L)
Warren, Richard M. and Roslyn P. Warren. Basis for judgments of relative brightness—445
Warren, Roslyn P.
Warren, Richard M. and ——. Basis for judgments of relative brightness—445
Waylonis, J. E.
Cox, J. T., ——, and W. R. Hunter. Optical properties of evaporated zinc sulfide in the vacuum ultraviolet—281(TA*13*)
Weeks, Richard F. Simple wide range specular reflectometer—775
Wein, C. G.
Mahan, A. I., C. V. Bitterli, and ——. Two-dimensional optical approach to the boresight error problem—290(SB*34*)
Mahan, A. I., C. V. Bitterli, and ——. Boresight error properties of a two-dimensional wedge—874(SB*52*)
Weinstein, W.
Slater, P. N. and ——. Light transmitted by very small pinholes—146
Weissler, G. L.
Walker, W. C., O. P. Rustgi, and ——. Optical transmission of evaporated In, Sn, and Bi films in the vacuum ultraviolet—1017(L)
Westheimer, Gerald
Campbell, F. W., ——, and J. G. Robson. Significance of fluctuations of accommodation—669(L)
—— International Symposium on the Fundamental Mechanism of Chromatic Discrimination in Animals and Man—866(TC*61*)
Whalen, R. E.
Cornsweet, T. N., H. Fowler, R. G. Rabedeau, ——, and D. R. Williams. Changes in the perceived color of very bright sources—283(TD*84*)
White, John U. and Nelson L. Alpert. Wide range infrared absorption cell—460
White, W. C.
Koehler, W. F., F. K. Odencrantz, and ——. Optical constants of evaporated selenium films—281(TA*14*)
Wickersham, A. F., Jr. Stokes' equations and their application to the refractivity of thin films—958
Wienke, Richard E.
Dimmick, Forrest L. and ——. Effect of luminance level on the red/green ratio—283(TD*83*)
—— Refractive error and color vision—288(FD*87*)
Wiggins, T. A.
—— and G. D. Saksena. Dispersion of a double-pass spectrograph—429(L)
Rank, D. H., G. D. Saksena, and ——. Shape of an emission line of CH produced in an oxyacetylene flame—521
Wight, Julia A.
Carpenter, Robert O'B., ——, Antonio Quesada, and Richard E. Swing. Predicting infrared molecular attenuation for long slant paths in the upper atmosphere—285(FB*31*)
Wildhack, W. A.
Kessler, K. G. and ——. Automation and optics—871(SA*12*)
Wilkinson, G. R.
Ford, M. A., W. C. Price, W. E. Seeds, and ——. Double-beam infrared microspectrometer—249
Wilkinson, P. G.
Meissner, K. W., R. D. VanVeld, and ——. Germanium standard wavelengths in the vacuum ultraviolet—1001
Williams, D. R.
Cornsweet, T. N., H. Fowler, R. G. Rabedeau, R. E. Whalen, and ——. Changes in the perceived color of very bright sources—283(TD*84*)
Williams, Dudley
Gilfert, James C. and ——. Pressure modulation of infrared absorption. I. Entire vibration-rotation bands—765
Williams, Van Zandt
Marshall, H. W., E. H. Siegler, and ——. Infrared instrumentation and apparatus—871(SA*11*)
Willoughby, A. B.
Broido, A. and ——. Measurement of intense beams of thermal radiation—344
Wintringham, W. T. Book review of *Acta Electronica, Volume 2, Nos. 1–2 (1957–1958)* published by Les Laboratoires d'Electronique et Physique Appliquée—671
Wise, R. B.
Pontarelli, D. A., ——, and O. H. Olson. Mark sensing in optical computations—502(L)
Wolfe, R. N.
Lamberts, R. L., G. C. Higgins, and ——. Measurement and analysis of the distribution of energy in optical images—487
Wood, Darwin L. and Shashanka S. Mitra. Effect of convergence on the infrared spectra of anisotropic substances—537
Woodland, N. J.
Goetz, W. E. and ——. Automatic data reduction of spot diagram information—965
Woodson, Robert A. Woodson interferometer—872(SA*26*)
Worley, R. Edwin. Achromatic fringes with the Michelson interferometer—872(SA*27*)
Wright, N.
Herscher, L. W., H. D. Ruhl, and ——. Improved optical null infrared spectrophotometer—36
Wright, W. D.
—— Color standards in commerce and industry—863(TA*1*)
—— *The Measurement of Colour* (Book). Reviewed by David L. MacAdam—1020
Wulff, V. J. Book Review of *The Visual Pigments* by H. J. A. Dartnall—761
Wurst, E. C., Jr.
Lasser, M. E., P. Cholet, and ——. High-sensitivity crystal infrared detectors—468
Wyszecki, Günter W.
Bedford, R. E. and ——. Wavelength discrimination for point sources—129

—— Evaluation of metameric colors—282(TB*35*)/451
Sanders, C. L. and ——. *L/Y* ratios in terms of CIE-chromaticity coordinates—389
Bedford, R. E. and ——. Luminosity functions for various field sizes and levels of retinal illuminance—406
—— Book review of *Farbenlehre und Farbmessung, Eine Kurze Einführung* by W. Schultze—583
—— Propagation of errors in colorimetric transformations—863(TA*13*)

Yamada, Y.
Yoshinaga, H., S. Fujita, S. Minami, A. Mitsuishi, R. A. Oetjen and ——. Far infrared spectrograph for use from the prism spectral region to about 1-mm wavelength—315
Yamada, Yahiko
Harrison, George R., Neville Sturgis, Sumner P. Davis, and ——. Production and testing of 10-inch diffraction gratings—287(FC*63*)
Yoder, P. R., Jr. Study of light deviation errors in triple mirrors and tetrahedral prisms—496
Yoshinaga, H., S. Fujita, S. Minami, A. Mitsuishi, R. A. Oetjen, and Y. Yamada. Far infrared spectrograph for use from the prism spectral region to about 1-mm wavelength—315

Zegers, Richard T.
Dillon, Donald J. and ——. Quantal determination and statistical evaluation of absolute foveal luminosity thresholds and of threshold variability—877
Zeiss, Carl. *Jenaer Jahrbuch* (Book). Reviewed by Wallace R. Brode—671
Zoellner, William G.
Rohrbaugh, John H., Charles Pine, ——, and Robert D. Hatcher. Theory of the echelette grating. III—710
Zweig, H. J.
Stultz, K. F. and ——. Relation of graininess and granularity for black-and-white samples with nonuniform granularity spectrum—283(TD*82*), 670(E)
——, G. C. Higgins, and D. L. MacAdam. On the information-detecting capacity of photographic emulsions—926
Zwerdling, Solomon. Oscillatory magneto-absorption of radiation in semiconductors—288(S*1*)

Subject Index to Volume 48

Key to Index use.

1. Subjects, not titles have been indexed.

2. Contents of papers (and abstracts of papers presented at meetings) have been indexed rather than a word breakdown of the title.

3. Principal subjects are given in boldface type. Cross-referenced subjects which should be consulted for a more thorough coverage are given in italics after the principal subject.

4. (L), (B), (E), (N) indicate: (L) Letters to the Editor; (B) Book Reviews; (E) Errata; and (N) Notes including Technical Notes, Personalia, and Necrology. The abstracts of papers presented at meetings are keyed by the same notation that identified them by day and session of presentation. If the paper covered by the abstract has been submitted and published in the same year as the abstract, this has been indicated by a solidus (/) between the abstract notation and the Journal page of the full article, i.e. 264(FA*12*)/622 indicates that the paper described in abstract No. FA12 on page 264 has been published in full on page 622.

5. Subjects have been indexed in subdivisions according to key words with prepositions such as "on," "in," "of," "with," included where essential for euphonious interpretation but not affecting the alphabetical arrangement of the principal subject. In many cases, where obvious, these prepositions have been omitted.

Aberration
anastigmat objective and control of residual spherical, 98
coefficients
tertiary intrinsic, 563
color correction
thin-lens of variable focal length, 578(L)
fifth-order, 290(SB*31*)
quaternary spherical coefficients computed, 757
tertiary coefficients computed, 747
Absorption (see *Spectra*)
Air
dispersion of — in 3651–15 300 A region, 455
refractivity of
infrared, 285(FA*13*), 313
visible and near ultraviolet, 285(FA*14*)
Air Force Cambridge Research Center
conferences
"Electronic Scanning of Antennas," April, 1958, 200(N)
"Extremely High Temperatures," March, 1958, 200(N)
Aluminum
optical properties of — for $h\nu$ between 10 and 26 ev, 71(L)
American Association for the Advancement of Science
report on Parliament of Science, Washington, March, 1958, 292(N)
American Astronomical Society
inauguration of a program of Visiting Professors in Astronomy, 199(N)
American Institute of Physics
announces educational plan for high schools and colleges, 200(N)
The Physics of Fluids, new journal published by, 434(N)
revision of Style Manual, 76(N)
Russian translations
Soviet Astronomy, 860(N)
Soviet Physics-Crystallography, 860(N)
American Society for Testing Materials
joint meeting of E-14 Committee with Mass Spectrometry Panel of Hydrocarbon Research Group of the Institute of Petroleum, University of London, September, 1958, 199(N)
sixth mass spectrometry symposium, New Orleans, June, 1958, 200(N)
Antimony
indium — detector
infrared high-sensitivity, 468
Applied Physics Corporation
new address, 672(N)
Arsenic Trisulfide
refractive index of, 633
Association of Universities for Research in Astronomy, Inc.
forms new corporation with National Science Foundation, 277(N)
Astronomy
visiting professor program sponsored by National Science Foundation, 861(N)
Astrophysics
stars
book on, 584(B)
Atmospheric Optics
air and evidence of water vapor at 80 and 100 km
rocket measurements of hydrogen Lyman Alpha line (1215.7A), 282(TC*62*)
backscattering correlated with transmission, 686
earth
emission spectrum of — atmosphere from 4 to 22.5μ, 874(SB*44*)
fog
visibility
improved by polarization technique, 285(FB*32*)
runways, 286(FB*33*)
turnpikes, 286(FB*34*)
haze
scattering coefficient for infrared radiation wavelength dependence, 172
infrared
absorption for various band absorption models, 873(SB*42*)
molecular attenuation
long slant paths in upper atmosphere, 285(FB*31*)
solar radiation
measurements by balloon to 100 000 feet, 1010
meridian auroral spectrograph, 872(SA*23*)
Rayleigh scattering coefficient
temperature dependence of, 1018(L)
sky
horizon
luminance of — at high altitudes, 282(TC*61*)
nadir — blue qualitatively indicated, 71(L)
photometry of — at high altitudes, 874(SB*43*)
solar hydrodynamics, 284(F*1*)
solar radiation
Russian satellite instrumentation for — measurements, 282(TC*63*)
sunlight
compared with accelerated test light sources
ultraviolet spectral energy distributions, 874(SB*45*)
thermal radiation reaching ground
emission spectrum of, 874(SB*44*)

transmission
diffuse — through haze and clouds over slant ranges, 0.5–9.0 kilometers, 463
visible radiation
scattered and then received from 4π source, 550
turbulence effect
deformable optical elements with feedback, 500(L)
visibility
fog and haze
polarization technique, 285(FB*32*)

Atomic Spectra (see *Spectra*)

Automation
and optics, 872(SA*12*)

Ballard, Stanley S.
appointed Chairman, Department of Physics, University of Florida, 1022(N)

Barbrow, Louis E.
awarded the Meritorious Service Award of the U. S. Department of Commerce, 673(N)

Barium Fluoride
infrared absorption cell, 583(L)

Bausch & Lomb Optical Company
announces issuance of a Parts Catalog, 360(N)
issues a list of interference filters, 433(N)

Beckman DK-1 Spectrophotometer
reflectance attachment for, 289(SA*13*)

Beckman DK-2 Spectrophotometer
reflectance attachment for, 289(SA*13*)

Birefringence
calcite, 869(TD*88*)
quartz, 869(TD*88*)
stress-
periclase, synthetic magnesium oxide, 556

Book Reviews
Acta Electronica, Volume 2, Nos. 1–2 (1957–1958). Reviewed by W. T. Wintringham, 671(B)
The Detection and Measurement of Infrared Radiation. R. A. Smith, F. E. Jones, R. P. Chasmar. Reviewed by David M. Gates, 198(B)
The Effect on Binocular Vision of Variations in the Relative Sizes and Levels of Illumination of the Ocular Images. H. F. Gillott. Reviewed by Kenneth N. Ogle, 198(B)
Encyclopedia of Physics (Handbuch der Physik). S. Flugge, Editor. Reviewed by Wallace R. Brode, 277(B)
Farbenlehre und Farbmessung, Eine Kurze Einfuhrung. W. Schultze. Reviewed by Gunter Wyszecki, 583(B)
The Focal Encyclopedia of Photography. Frederick Purves, Editor. Reviewed by Wallace R. Brode, 277(B)
Geometrical and Physical Optics. R. S. Longhurst. Reviewed by F. A. Jenkins, 431(B)
The Infra-Red Spectra of Complex Molecules (Second Edition). L. J. Bellamy. Reviewed by Wallace R. Brode, 860(B)
Jenaer Jahrbuch. Carl Zeiss. Reviewed by Wallace R. Brode, 671(B)
Light-Scattering Functions. R. H. Boll, J. A. Leacock, G. C. Clark, and S. W. Churchill. Reviewed by Wallace R. Brode, 671(B)
Mass Spectroscopy. H. E. Duckworth. Reviewed by Charles F. Robinson, 584(B)
The Measurement of Colour. W. D. Wright. Reviewed by David L. MacAdam, 1020(B)
Microphotography—Photography at Extreme Resolution. G. W. W. Stevens. Reviewed by Lloyd E. Varden, 671(B)
Photographic Sensitivity, Volume 2. Tokyo Symposium. Shin Fujisawa, Editor. Reviewed by Wallace R. Brode, 860(B)
Die Photographische Empfindlichkeit (The Nature of Photographic Sensitivity). J. W. Mitchell. Reviewed by John F. Hamilton, 585(B)
Principles of Perception. S. Howard Bartley. Reviewed by Glenn A. Fry, 670(B)
Proceedings of the Sixth International Colloquium on Spectroscopy (Amsterdam, 1956). W. van Tongeren, F. Freese, and E. H. S. van Someren, Editors. Reviewed by Wallace R. Brode, 359(B)
Sensitometry in Practice. Keith M. Hornsby. Reviewed by F. H. Perrin, 670(B)
Vacuum Deposition of Thin Films. L. Holland. Reviewed by Georg Hass, 504(B)
The Visual Pigments. H. J. A. Dartnall. Reviewed by V. J. Wulff, 761
White Dwarfs. E. Schatzman. Reviewed by Jesse L. Greenstein, 584(B)
Wörterbuch der Photo-, Film- und Kinotechnik 1 Band. Wolfgang Grau. Reviewed by Wallace R. Brode, 1020(B)

Booker, L. G. S.
given major role in planning a color science exhibit for Brussels Fair, 434(N)

Brightness (see *Luminance*)

Brode, Wallace R.
appointed Science Adviser to Secretary of State, 141

Burns, Keivin
necrology, 762

Cadmium Sulfide
sensitizing dyes adsorbed on, 1, 948
effect of density, 1, 948

Calcite
birefringence of, 869(TD*88*)

Camera
air survey
calibration of — and optical problems, 287(FC*65*)
component of large-aperture grating spectrograph, 872(SA*22*)
dual-rate moon, 282 (T*51*)
determination of Ephemeris Time, 282(T*51*)
smear
rotating mirror
elastic distortion and time resolution, 365

Catalán, Migual A.
necrology, 138(N)

Cathode-ray-tube
flying-spot scanning system
microscope measurements, 875(SB*51*)

Cells
absorption
infrared multiple traversal gas, 460
absorption infrared
barium fluoride, 583(L)

Cesium Iodide
infrared transmittance and reflectance, 668(L)

Coatings (see also *Films*)
aluminum
specular and diffuse reflectance of achromatic — surfaces, 868(TD*82*)
antireflection
germanium and silicon in infrared, 677
reflecting aluminum
for extreme ultraviolet, 868(TD*71*)
for grating blanks, 868(TD*71*)
transmission of infrared radiation
prediction of, 868(TD*81*)
transparent — on glass
ultraviolet transmission of, 857(L)

Coherence
partial
phase change in two-beam interference, 95
Color (see also *Colorimetry*)
book on, 583(B)
constancy in shadows, 283(TD*81*)/976
coordinate system with cube-root function, 736
differences
Munsell and MacAdam color spaces compared, 606
photoelectric — meter, 985
image
nature of, 866(TC*51*)
lightness index of
prediction with luminous reflectance, 389
MacAdam color-difference computer, 281(TB*34*)
measurement of, 985(B)
metameric
evaluation of, 282(TB*35*)/451
mixture computer, 281(TB*33*)
Munsell — standards in high gloss surface, 672(N)
projection system, 281(TB*32*)/841
scales
subjective
dependence on adaptation and surround-to-test stimulus interrelations, 867(TC*62*)
specification
Munsell renotations
digital reduction of spectrophotometric data, 864(TA*14*)
extension of, 864(TA*15*)
colorimetric data converted mechanically to, 865(TA*16*)
standards
in commerce and industry, 864(TA*1*)
new safety, 672(N)
television tubes, 1021(N)
available from National Bureau of Standards, 1021(N)
surface- — perception
effect of shadowing on, 283(TD*81*)/976
television
announcement of publication of proceedings of International Symposium on Physical Problems of —, Paris, July, 1957, 73(N)
book on, 671(B)
N.T.S.C. — system, 867(TC*63*)
white surfaces
description and measurement of, 597
Colorimeter
differential
high sensitivity, 276(E)
thermal radiation, 344
visual
portable telescopic, 474
Colorimetry (see also *Color*)
chromaticity
luminance and constant brightness, 228
scale
Munsell and MacAdam color spaces compared, 606
CIE-chromaticity coordinates
L/Y ratios, 389
Electrofax printing process and, 864(TA*12*)
matching colors in shadows, 283(TD*81*)/976
reflectance curves
metameric colors evaluated from, 451
sources for
CIE standard light — A
relative spectral energy distribution, 608
specification
from spectrophotometry, 281 (TB*31*)
transformations
propagation of errors, 864(TA*13*)
tristimulus computations
accuracy of, 334, 761(L)
of white surfaces, 597
Computers
Burroughs E 101
use in spectroscopy, 872(SA*21*)
colorant mixture, 281(TB*33*)
IBM 704
automatic ray tracing with, 666(L)
MacAdam color-difference, 281(TB*34*)
mark sensing in optical, 502(L)
spot diagram data reduced, 965
Consultants Bureau, Inc.
announcement of English translations of papers given at Soviet Conference on Elementary Particle Accelerators, 433(N)
Crabtree, John I.
awarded honorary master of photography degree, 762
Crampton, George S.
recipient of Edward Longstreth Medal, Franklin Institute, 861(N)
Crystals, Crystallography
adsorbed dyes
energy transfers between
desensitization, 1
anisotropic
infrared spectra and convergence effect, 537
book translations on
Growth of Crystals, 672(N)
Soviet Research in Crystallography (Collection No. 5), 672(N)
Splitting of Terms in Crystals, 672(N)
brucite (magnesium hydroxide)
infrared absorption spectra, 770
cadmium sulfide
luminescence of — at room temperature under intense irradiation, 869(TD*87*)
periclase, synthetic magnesium oxide
stress optical behavior of, 556
portlandite (calcium hydroxide)
infrared absorption spectra, 770
potassium chloride
x-ray colored
thermoluminescence spectra of, 996
reflectivity of simple
specular reflectometer for, 775

Debenham, Jack K.
appointed assistant director of the film testing division at Kodak, 761
Densitometer, Densitometry
simultaneous converting automatic, 864(TA*11*)
Detectors
germanium, gold-antimony doped
infrared high-sensitivity, 468
indium antimonide
infrared high-sensitivity, 468
infrared
crystal high-sensitivity
germanium, gold-antimony doped, 468
indium antimonide, 468
radiation
distribution of modulation frequencies, 63, 431(E)
Detectors
ultraviolet
lead sulfide photocells, 1007
Diffraction
apparatus for variable multi-slit, 286(FC*62*)
boresight error problem

Fresnel — of light
edge parameters effect on — at infinite half-plane, 873(SA*28*)
two-dimensional optical approach, 290(SB*34*)
light
multiple — by ultrasonic vibrations in transparent solids, 663
two-dimensional wedge and boresight error properties, 875(SB*52*)
x-ray
new publication, 200(N)
Diffraction Gratings (see *Gratings*)
Diffractometer
optical
intensity distribution near focus in diffraction patterns of circular and annular apertures, 844
phase change measured in two-beam interference with partially coherent light, 95
Dispersion
air
measurements, 3651–15 300 A, 455
of double-pass spectrograph, 429(L)
Dryer, Harry
appointed supervisor of Applied Research Laboratories' Detroit Demonstration Center, 278(N)
Dyes
adsorbed on crystals
energy transfer
desensitization, 1
mixture analysis
with electronic calculating punch, 972
sensitizing
adsorbed on cadmium sulfide crystals, 1, 948
concentration effect, 948

Eidophor
deformable optical element with feedback, 500(L)
Electronic Computers (see *Computers*)
Electromagnetic Waves
plane
propagation of — in inhomogeneous media, 513
Electron Microscope Society of America
annual meeting, Los Angeles, September, 1958, 74(N)
Electroretinogram (see *Vision*)
Ellipsometer, Ellipsometry
simplified treatment of, 51
thin film, 869(TD*83*)
Emission (see *Spectra* and *Sources*)
Emissivity
absolute — of metals
spectral and angular dependence, 869(TD*86*)
Errata (see individual subject entries)
Estey, Roger S.
joined the technical staff of Nortronics as a research scientist, 507(N)
Eye (see *Vision*)

Fairchild, Charles O.
necrology, 138(N)
Faraday Effect
gases and vapors, 339
Fiber Optics
microwave analysis, 871(FB*42*)
optical insulation in, 871(FB*41*)
status of, 871(FB*31*)
Films (see also *Coatings*)
cadmium sulfide
photoconductivity of
desensitization of — by dyes, 1
cerium dioxide
optical properties and structure of, 324
color
neutral photographic dye images
instrument for selecting, 4
neutral selector
color-wedged film samples for use in, 225
color — neutrals
visual selection of, 215
ellipsometry, 51
Drude approximation, 51
infrared reflectance of
aluminum, 88
silver, 88
inhomogeneous
reflection coefficient of optically, 654
interferometry method of coincidence, 55
large step height measured, 55
luminescent
zinc silicate, manganese-activated
red, yellow, and green luminescence produced, 816
magnesium fluoride
optical constants of — measured by frustrated total reflection, 482
metal evaporated
infrared reflectance of, 88
aluminum, 88
silver, 88
metallic
optical transmission of evaporated — in vacuum ultraviolet
bismuth, 1017(L)
indium, 1017(L)
scandium, 1017(L)
selenium
optical constants of — in 0.23 to 2.5μ region, 281(TA*14*)
thickness
multiple beam interferometric measurements
low order of interference obtained, 858(L)
thin
book on, 504(B)
cylindrically curved
interference fringes, 92
dielectric
optical constants of, 482
measured by frustrated total reflection, 482
ellipsometer, 869(TD*83*)
refractivity of
Stokes' equations and, 958
transparent
interferometric thickness measurement, 275(L)
zinc sulfide
optical properties of — in vacuum ultraviolet, 281(TA*13*)
Filters
interference
mica — with transmission bands of very narrow half-widths, 869(TD*84*)
phase-dispersion — and its characteristics, 280(TA*12*)
wedged ultra-narrow
for high-resolution rapid-scanning spectroradiometer, 280(TA*11*)
Lyot
birefringence of quartz and calcite in, 869(TD*88*)
multilayer — design
by successive approximations, 955
using two effective interfaces, 43
quality factors
calculation of, 276(L)
Solc birefringent, 142
Fluorescence (see *Luminescence* and *Phosphors*)

Gases
infrared adsorption studies, 765
pressure modulation, 765
Verdet constants in 3635–9875 A range, 339
Germanium
gold-antimony doped
infrared detector of high-sensitivity, 468
refractive index of, 579(L)
Geometrical Optics
wave optics compared to — using Fourier analysis, 567
astigmatism, 567
coma, 567
spherical aberration, 567
wave optics compared with — by Fourier analysis, 57
Glass
optical
dispersion of — in visible and infrared, 534
in apochromats
selection of, 269
Taylor Triplets
selection of — by special method, 558
transparent coatings on
ultraviolet transmission of, 857(L)
Gloss
Munsell standards in high, 672(N)
paint surfaces scale, 741
Glossmeter
high-speed, direct reading, 241
Granville, Walter C.
elected President of the Inter-Society Color Council, 200(N)
Grating
coatings for, 868(TD*71*)
diffraction
production and testing of 10-inch, 287(FC*63*)
synchronous wavelength sweep of — and Fabry-Perot Interferometer, 177
echelette
theory of, 704, 710
Gray, Arthur W.
necrology, 74(N)

Hague, John L.
awarded the Meritorious Service Award of the U. S. Department of Commerce, 673(N)
Hansom, Wesley T., Jr.
awarded honorary master of photography degree, 762
Hass, Georg H.
awarded the Commanding General's Medal for Technological Achievement, Fort Belvoir, Virginia, 673(N)
Hardy, Arthur C.
Frederick Ives Medalist for 1957, 77
address, 82
bibliography, 81
Hasler, Maurice F.
received Beckman Award, 506(N)
Huxford, Walter S.
necrology, 673(N)

Image (see also *Lens*)
axicon
formation of, 576(L)
diffraction patterns of circular and annular apertures
intensity distribution near focus investigated experimentally, 844
edge trace
energy distribution of — and its relation to energy distribution of image of line, 487
line
energy distribution and sine-wave response, 490
line-spread function
energy distribution of — and its relation to energy distribution of edge trace image, 487
mechanical — dissector, 965
automatic data indication of spot diagram information, 965
optical
energy distribution
measurement and analysis of, 487
geometric — formation
Fourier analysis applied, 57
projection system for color, 281(TB*32*)
synthesis and lens response using spot diagrams, 351
Ingersoll, Leonard R.
necrology, 674(N)
Instruments
infrared — and apparatus
review of, 872(SA*11*)
neutral photographic dye images selected, 4
Interference
high-order, 873(SA*25*)
multiple beam — fringes
cylindrically curved thin films, 92
two-beam
phase change with partially coherent light, 95
Interferometer
divided beam
fringe sharpening, 375
Fabry-Perot
etalon
infrared dispersion measurements, 430(L)
synchronous wavelength sweep of — and diffraction grating, 177
Michelson
achromatic fringes, 873(SA*27*)
moving mirrors
photoelectric fringe signal information, 276(E)
new — for combination of two images of source after each traversed separate optical path, 286(FC*61*)
Series
multiple-beam fringe sharpening, 309
Woodson
distance of test point from reference plane measured, 873(SA*26*)
Interferometry
CH emission from oxyacetylene flame, 178
coincidence method
measurement of step height, 55
double beam Mach-Zehnder type
fringe intensity and spectrum, 525
emission spectra
contour of CH line (λ 4226A) in oxyacetylene flame, 521
film thickness measured by, 275(L)
isotope shifts
mercury, singly and doubly ionized, 459
multiple-beam
film thickness measurement
low orders of interference obtained, 858(L)
fringes of equal chromatic order
coincidence method, 55
obliquity effects in, 286(F*51*)
reflecting echelon
zinc isotopic shift in arc spectrum determined, 851
spectrum and fringe intensity, 525
step heights measured, 255
phase shift effects in fringes of equal chromatic order, 255
International Commission of Illumination (C.I.E.)
publishes a new international vocabulary of lighting terms, 585(N)
report on, 204(N)

International Commission on Optics
Fifth meeting and conference, Stockholm, August, 1958, 432(N)
symposium on optics and metrology, Belgium Committee of Optics, May, 1958, 199(N)
International Geophysical Year
Soviet Bloc information
new weekly report published by the Office of Technical Services, U. S. Department of Commerce, 433(N)
International Lighting Vocabulary
new publication of the International Commission on Illumination (C.I.E.), 585(N)
Inter-Society Color Council
announcement of officers for 1958–1959, 433(N)
annual meeting, Washington, March 1958, 140(N)

Jensen, John C.
necrology, 278(N)

Kiess, Carl C.
retired from National Bureau of Standards, 137(N)
Kurtz, Henry F.
necrology, 361(N)

Layer (see *Film*)
Lamps
fluorescent
total flux measured, 246
Lens (see also *Image*)
aberrations
longitudinal and lateral chromatic
correction of — in variable focal length lens, 578(L)
spherical, residual in anastigmat, 98
anastigmat
photographic
residual spherical aberrations, 98
apochromatic
optical glass selection for, 269
bench
recording electronic, 968
cataract
wide-field aspheric — series, 868(TC*67*)
edge trace of — predicted from spot diagram, 487
-film response curves
methods for combining — compared, 874(SB*47*)
microwave
aberration-free
phase anomaly along axis, 643
phase distribution in focal region of, 290(SB*32*)
photographic
transfer function of — measured with sinusoidal sweep frequency targets, 875(SB*50*)
ray tracing
circular cross section, 667(L)
with IBM 704, 666(L)
response
image synthesis and — using spot diagrams, 351
sine-wave response of, 490
stigmatic, 500(L)
system design
based on analysis of aberrations in terms of aberration coefficients, 563
Taylor Triplets
optical glass selection by special method for, 558
testing
improved sinusoidal charts, 858(L)
with two aspheric surfaces
fifth-order aberrations, 290(SB*31*)
varifocal lens system
optically compensated, general theory, 154
Zoomar, generalized theory, 149

Lerma Engineering Corporation
new optical instrumentation firm established, 860(N)
Light
conference on — and vision, University of Michigan, March, 1958, 140(N)
day or artificial
spectral distribution waves determined with continuously recording spectroradiometer, 832
scattering
for latex spheres in water, 261
single particle functions, 261
vocabulary, international, of lighting terms newly published by the International Commission on Illumination, 585(N)
Liquids
surface
free — as optical element, 480
Lowell Technological Institute
announces the establishment of an advisory committee on nuclear engineering, 433(N)
Luminance (see also *Brightness*)
brightness dependence on 287(FD*81*)
sky
horizon at high altitudes, 282(TC*61*)
Luminescence
cadmium sulfide
at room temperature under intense irradiation, 869(TD*87*)
electro-
zinc sulfide as equilibrium process, 647
thermo-
x-ray colored potassium chloride crystals, 996
willemite (zinc silicate, manganese-activated) films
red, yellow, and green luminescent phases produced, 816

MacAdam, David L.
named Fellow of the Society of Motion Picture and Television Engineers, 862(N)
McCamy, C. S.
appointed Chief of the Photographic Technology Section of the Optics and Metrology Division at the National Bureau of Standards, 673(N)
McFarland, Ross A.
named Professor of Environmental Health and Safety in the New Division of Environmental Hygiene in the Harvard School of Public Health, 762
Materials
infrared
calcium aluminate glass
optical properties of — at elevated temperatures, 869(TD*85*)
polycrystalline silicon
optical properties of — at elevated temperatures, 869(TD*85*)
Mechanismus des Farbensehens
book originally in French edition now available in German, 137(N)
Meggers, William F.
retired from the National Bureau of Standards, July, 1958, 861(N)
Mercury
atomic beam lamp, 22
Metals
emissivity
absolute — and spectral and angular dependence, 869(TD*86*)
Metrology
symposium on — and optics, Belgium Committee of Optics, International Commission of Optics, May, 1958, 199(N)
Microphotometer (see *Densitometer*)

Microscope (see also *Microscopy*)
flying-spot — measurement systems, 875(SB*51*)
Microscopy (see also *Microscope*)
infrared
micro sample preparation for, 870(FA*21*)
symposium on —, Chicago, June, 1958, 361(N)
Miles, Walter R.
named chief scientist at the U. S. Naval Medical Research Laboratory, 435(N)
Mirrors
aluminum-nickel, 583(L)
elliptical
radiation distribution from, 637
parabolic
radiation distribution from, 637
paraboloidal
fabricating of, 86
rotating
distortion and time resolution in smear cameras, 365
triple
light duration errors in — and tetrahedral prisms, 496
Molecular Physics
new journal published by Academic Press, Inc., 361(N)
Monochromators
grating
Pfund-type
method of double-passing, 289(SA*15*), 872(SA*24*)
Mundie, Lloyd G.
appointed head of the infrared department, systems division, Bendix Aviation Corporation, 278(N)

Nagel, Max R.
appointed Chief of the Radiative Transfer Branch, Thermal Radiation Laboratory of the Geophysics Research Directorate, Air Force Cambridge Research Center, 586(N)
National Science Foundation
announcement of Kitt Peak as site for new National Astronomical Observatory, 432(N)
forms new corporation with Association of Universities for Research in Astronomy, Inc., 277(N)
Necrology
Burns, Keivin, 762
Catalán, Migual A., 138(N)
Fairchild, Charles O., 138(N)
Gray, Arthur W., 74(N)
Huxford, Walter S., 673(N)
Ingersoll, Leonard R., 674(N)
Jensen, John C., 278(N)
Kurtz, Henry F., 361(N)
Plymale, William S., 673(N)
Pursley, William K., 435(N)
Sandvik, Otto, 74(N), 200(N)
Nephelometer
volume scattering function of natural waters, 354
New England Spectroscopy Society
information on, 434(N)

Oceanography
asymptotic radiance theorem, 874(SB*46*)
Oetjen, Robert A.
appointed assistant dean of the College of Arts and Sciences, Ohio State University, 278(N)
O'Neill, Edward L.
awarded Adolph Lomb Medal, 506(N)
Optical Constants
films, thin, dielectric
frustrated total reflection for measurement of, 482
Optical Crystals (see *Crystals*)
Optical Elements
off-axis ellipsoids as, 289(SA*14*)
Optical Industry Directory
announcement of publication of 1958 issue, 360(N)
Optical Materials
Optical Properties
aluminum for $h\nu$ between 10 and 26 ev, 71(L)
Optical Pumping
technique, 865(TB*33*)
Optical Society of America
annual reports, 1957
editor of publications, 589(N)
secretary, 590(N)
treasurer, 593(N)
minutes of meeting of Board of Directors, 587(N)
by-law revision, 675(N)
local sections
meetings
March, 1958
abstracts of papers presented at meeting, 280
program, 76(N), 140(N)
October, 1957
minutes of meetings
annual business meeting, 203(N)
Board of Directors, 202(N)
officers
for 1958–1959, 862(N)
appointment of associate editors, 76(N)
medals
Ives Medal for 1958 awarded to Deane B. Judd, 870
address, 870(F*1*)
Edgar D. Tillyer
Charles Sheard, 1957, 205
bibliography, 206
Frederick Ives Medalist for 1957, Arthur C. Hardy, 77
address, 82
bibliography, 81
Optical Systems
aberrations
fifth-order, 290(SB*31*)
quaternary spherical coefficients computed, 757
tertiary coefficients computed, 747
axicon
formation of, 576(L)
element
deformable — with feedback, 480, 500(L)
element using free surface of liquid, 480
lens
design
based on analysis of aberrations in terms of aberration coefficients, 563
fundamental aberrations, 351
response and spot diagrams, 351
low-quality condensing but bulk collector of radiant energy, 953
testing of, 953
concentration ratio, 953
energy distribution in focal region, 953
points in focal region and exit point, 953
off-axis ellipsoids as, 289(SA*14*)
pinhole illumination
light transmission, 146
response function
asymptotic behavior of, 579(L)
Optics
book on, 431(B)
conference on radiation and —, International Commission for Optics, Stockholm, August, 1958, 432(N)
course on —, Imperial College, London, July, 1958, 508(N)
symposium on — and metrology, Belgium Committee of Optics, International Commission of Optics, May, 1958, 199(N)

Paint
gloss scale for — surfaces, 741
Periclase
synthetic magnesium oxide crystals
stress-optical behavior, 556
Personalia
Ballard, Stanley S., 1022(N)
Barbrow, Louis E., 673(N)
Booker, L. G. S., 434(N)
Brode, Wallace R., 141
Crabtree, John I., 762
Crampton, George S., 861(N)
Debenham, Jack K., 761
Dryer, Harry, 278(N)
Estey, Roger S., 507(N)
Granville, Walter C., 200(N)
Hague, John L., 673(N)
Hanson, Wesley T., Jr., 762
Hardy, Arthur C., 77
Hasler, Maurice F., 506(N)
Hass, Georg H., 673(N)
Kiess, Carl C., 137(N)
MacAdam, David L., 862(N)
McCamy, C. S., 673(N)
McFarland, Ross A., 762
Meggers, William F., 861(N)
Miles, Walter R., 435(N)
Mundie, Lloyd G., 278(N)
Nagel, Max R., 586(N)
Oetjen, Robert A., 278(N)
O'Neill, Edward L., 506(N)
Sheard, Charles, 205
Staud, Cyril J., 74(N)
Teele, Ray P., 862(N)
Trees, Richard E., 673(N)
Wright, Norman, 586(N)
Phosphorescence (see *Luminescence* and *Phosphors*)
Phosphors
excitation spectra of, 67
zinc sulfide
electroluminescence of — as equilibrium process, 647
zinc cadmium sulfide
applied to infrared photography, 812
Photoconductivity
of cadmium sulfide films
desensitization of — by dyes, 1
visual receptor process, 581(L)
Photocells
lead sulfide
Photoelasticity
of semiconductors
measured with infrared polariscope, 289(SA*11*)
Photogrammetry
viewing conditions
effect on observer accuracy with stereoplotting equipment, 867(TC*65*)
Photographic Emulsions
color
film neutrals
visual selection of, 215
dye images
instrument for selecting visually neutral, 4
visually neutral areas selected
color-wedged film samples for, 225
graininess and entropy, 945
granularity
effect
on content of photographic recordings, 9, 276(E)
on dynamic range, 9, 276(E)
and graininess
black-and-white samples with nonuniform granularity spectra, 283(TD*82*), 670(E)
models of — considered statistically, 874(SB*48*)
image-forming properties
line-spread function, 926, 934
point-spread function, 926, 934
transfer-function, 926, 934
information-detecting capacity, 926
comparison with radiation detectors, 926
lens-film response curves
methods for combining — compared, 874(SB*47*)
negatives
minimum energy detectable, 875(SB*49*)
printing
electro- — process called Electrofax
colorimetry and, 864(TA*12*)
sensitivity
Tokyo symposium on, 860(B)
sensitization, 670(B)
behavior in ultraviolet region,
efficiency of, 1, 948
energy transfers between crystals and adsorbed dyes, 1, 948
sine-wave response, 290(SB*33*)
Photography
color reproduction
telescopic visual colorimeter for, 474
dictionary for — terms in English, French, German, 1020(B)
micro-
book on, 671(B)
new encyclopedia of, 277(B)
infrared
zinc cadmium sulfide phosphors used in, 812
sensitivity
book on, 585(B)
sinusoidal test charts, 858(L)
Photometer, Photometry
portable, transistorized photomultiplier, 283(TC*65*)
of sky at high altitudes, 874(SB*43*)
Photon
current
transport calculation of
isotropically-scattering atmosphere, 371
Physics
new encyclopedia of, 277(B)
Russian-English Solid State Glossary, new publication by Consultants Bureau, Inc., 433(N)
The Physics of Fluids
new journal published by the American Institute of Physics, 434(N)
Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy
tenth conference, March, 1959, 860(N)
Plymale, William S.
necrology, 673(N)
Polariscope
infrared
photoelasticity of semiconductors measured, 289(SA*11*)
Polarization (see also *Light*)
elliptical
properties of — reflected from thin films, 51
Prisms
cesium iodide
infrared transmittance and reflectance, 668(L)
steel
two-compartment hollow, 581(L)
tetrahedral
light duration errors in — and triple mirrors, 496

Pursley, William K.
necrology, 435(N)

Quartz
birefringence of, 869(TD*88*)

Radar
recordings
correction of slant range distortion, 681
Radiance
theorem
asymptotic — and practical consequences, 874(SB*46*)
Radiation, Radiant Energy (see also *Light*)
distribution of — from elliptical and parabolic mirrors, 637
information center on —, established at Battelle Memorial Institute, Columbus, Ohio, 199(N)
infrared
general bibliography, Part II, published by Office of Technical Services, U. S. Department of Commerce, 434(N)
book on, 198(B)
channeled by metal light pipes, 531
instrumentation and apparatus, 872(SA*11*)
scattering coefficient for — in natural haze, 172
summer program in physics of —, Massachusetts Institute of Technology, July, 1958, 360(N)
interaction with matter, 280(T*2*)
modulation
sinusoidal — approximated, 63, 431(E)
plant growth control by, 280(T*1*)
thermal
intense beams of — measured, 344
thermal reaching earth
emission spectrum of — from 4 to 22.5μ, 874(SB*44*)
visible
scattered — received from 4π source by uncollimated receiver, 550
Ray Tracing
computations
mark sensing, 502(L)
deviation errors
in triple mirrors and tetrahedral prisms, 496
lens
automatic
with IBM 704, 666(L)
of circular cross section, 667(L)
through triple mirrors and tetrahedral prisms
vector analysis method for, 496
Reflectance
aluminum
achromatic — surfaces, 868(TD*82*)
incomplete integrating sphere, 287(FC*64*)/828
Reflectivity, Reflection (see also *Reflectance*)
absolute — of single crystals
instrument for measurement at liquid nitrogen temperature, 775
coefficient of optically inhomogeneous layers, 654
diffuse
Perfect Lambertian, 275(L)
frustrated total
thin dielectric films and measurement of optical constants, 482
infrared
metal films
aluminum, 88
silver, 88
Reflectometer
spectro-
recording — for ultraviolet, visible and near-infrared regions, 289(SA*13*), 670(E)
specular
simple wide range, 775
crystal measurement at liquid nitrogen temperature, 775
Refraction
thin films
Stokes' equations, 958
Refractive Index
air
infrared, 285(FA*13*), 313
visible and near ultraviolet, 285(FA*14*)
arsenic trisulfide, 633
fused silica in ultraviolet, 869(TD*89*)
germanium, 579(L)
glass in visible and infrared, 534
infrared — measured, 388
sapphire, synthetic, 72(L), 629
birefringence, 629
Refractometer
interference
principle of, 90
phase-contrast
infrared, 388
photo-
dielectric cylinder, 871(FB*43*)
Refrigerants
boiling
suppression of bubbling in — during optical measurements, 358(L)
Resolving Power
of double-pass spectrograph, 429(L)
Rocket
exhaust flames
temperature measurements by photographic technique, 717
material in exhaust path of — engine
high-temperature measurements by two-color method, 282 (TC*64*)
Russian-English Solid State Glossary
new publication by Consultants Bureau, Inc., 433(N)

Sandvik, Otto
necrology, 74(N), 200(N)
Sapphire
synthetic
properties of, 629
optical, 629
piezo-optical, 629
thermo-optical, 629
refractive index of, 72(L)
Satellite
polyhedral
orbit data more accurately measured, 667(L)
Scattering
isotropically- — atmosphere
net photon current, 371
light
functions, 671(B)
natural waters
submarine nephelometer for measuring, 354
by single particle for latex spheres in water, 261
Mie — coefficients
interpolation methods for, 873(SB*41*)
Rayleigh — coefficient in atmosphere
temperature dependence, 1018(L)
Semiconductors
oscillatory magneto-absorption of radiation in germanium, indium arsenide, and indium antimonide, 288(S*1*)
photoelasticity
measured with infrared polariscope, 289(SA*11*)

Sheard, Charles
awarded Edgar D. Tillyer Medal for 1957, 205
bibliography, 206
Silica
fused
index of refraction of — in ultraviolet, 869(TD*89*)
Slit
flux through slit
vibrating in amplitude-modulated harmonic motion, 760(L)
vibrating sinusoidally, 760(L)
Society for Applied Spectroscopy
New York section
meetings for 1958, 73(N)
Philadelphia section
meetings for 1958, 73(N)
Solids
transparent
multiple diffraction of light by ultrasonic vibrations, 663
Sources
atomic beam
mercury — lamp, 22
infrared
blackbody
controlled — employing conical cavities, 289(SA*12*)
lamp
flash — of high-intensity, low-energy for below 2000A, 548
fluorescent
total flux measured, 246
mercury atomic beam, 22
light
standard CIE source A for colorimetry
relative spectral energy distribution, 608
natural sunlight and indoor light sources compared
ultraviolet spectral energy distributions, 874(SB*45*)
photon
net current calculated from transport equation in isotropically-scattering atmosphere, 371
plasma jet, 866(TB*42*)
secondary
pinhole and light transmitted, 146
vacuum ultraviolet
high-intensity, low-energy flash lamp, 548
Spark (see *Sources*, *Spectra*)
Spectra
publication of Near Infrared — by Anderson Physical Laboratory, 359(N)
Atomic, Emission, Infrared
argon I, 285(FA*12*)
chlorine I between 10 000 and 20 000A, 285(FA*11*)
krypton I, 285(FA*12*)
Atomic, Emission, Ultraviolet, Visible
argon II
Stark effect, 853
calcium 40 resonance line at 4226A by interference technique, 873(SA*25*)
germanium
standard, 1001
standard wavelengths, 1998–1630 A, 31
hafnium
isotope shifts, 658
high-temperature shock tubes, 284(F*3*)
iodine II, 866(TB*44*)
krypton 86, 300
lead II isotopic shift, 302
mercury
energy levels of configuration $6p^2$ in HgI, 668(L)
mercury 198, 300
mercury isotopes, singly and doubly ionized, 459
nickel III, 183
nitrogen, solid "active," 865(TB*32*)
thorium, 859(L)
zinc
isotopic shift in arc spectrum, 851
zirconium, 28
atomic energy levels
Bacher and Goudsmit's Theory
first, second, and third approximations compared, 293
Infrared
anisotropic substance, 537
effect of convergence, 537
Molecular, Absorption, Infrared
brucite (magnesium hydroxide), 770
complex molecules, 860(B)
deuterium, 866(TB*43*)
hydrogen, 866(TB*43*)
nitrogen oxide (NO) magnetic rotation, 866(TB*45*)
portlandite (calcium hydroxide), 770
pressure modulation
carbon monoxide, 765
methane, 765
nitrous oxide, 765
propane, 765
Molecular, Absorption, Ultraviolet, Visible
oxygen in Schumann-Runge region, 548
Molecular, Emission, Visible, Ultraviolet
CH line λ 4226A in oxyacetylene flame, 521
contour by interferometric measurements, 521
neon continuum, 1018(L)
rare gases, 304
helium, 304
neon, 304
Molecular, Transmission, Infrared
phosphors
excitation of — measured, 67
Zeeman Effect
erbium, 542
Spectrochemical Analysis
flame
excitation as function of sample flow, 576(L)
report on the identification and differentiation of microorganisms by means of their infrared spectra, 432(N)
Spectrograph, Spectrography
auroral
new meridian, 872(SA*23*)
course at Boston College, July, 1958, 277(N)
double-pass
dispersion, 429(L)
resolving power, 429(L)
grating
large-aperture — with camera components, 872(SA*22*)
infrared far
18 micron to 1 mm region, 315
prism
visible $f/1.1$, 358(L)
solar vacuum — for measuring solar spectrum, 284(F*1*)
Spectrometer, Spectrometry, Spectrophotometry, Spectrophotometer (see also *Photometer*)
absorption
models for spectral band absorption, 690
band-pass
determined by dynamic approach, 865(TA*17*)
Beckman DK Spectrophotometer
performance of, 380
Ebert grating vacuum, 106
flame
oxyacetylene
CH emission line (λ 4226A) contour measured interferometrically, 521

Spectrometer, Spectrometry, Spectrophotometry, Spectrophotometer (Continued)
grating
Ebert vacuum, 106
infrared
atmospheric absorption for various band absorption models, 873(SB*42*)
channelling through metal light pipes, 531
convergence effect on spectra of anisotropic substances, 537
of fibre specimens of natural and synthetic high polymers, 1017(L)
optical-null double-beam, 36
prism, calibration of, 73(L)
interferometric
contour of emission line (λ 4226A) of CH in oxyacetylene flame, 521
fringe intensity and spectrum, 525
mass
symposia
Panel of Hydrocarbon Research Group (Institute of Petroleum) and Committee E-14 of the American Society for Testing Materials, University of London, September, 1958, 199(N)
Sixth Meeting, American Society for Testing Materials, New Orleans, June, 1958, 200(N)
micro-
infrared
double-beam, 249
Munsell renotations from digital reduction of — data, 864(TA*14*)
precision
colorimetry from, 281(TB*31*)
prism
infrared, calibration of, 73(L)
reflection
incomplete integrating sphere, 287(FC*64*)/828
spectral region recorded as function of time, 712
Spectroradiometer, Spectroradiometry
abridged
method of — using detector and two filters, 34
analyzed mathematically, 34
daylight or artificial light
continuously recording, 832
high-resolution rapid-scanning
wedged ultra-narrow interference filter for, 280(TA*11*)
Spectroscopy
absorption
free radicals in shock tube, 866(TB*41*)
applied
symposia
American Association of Spectrographers, 860(N)
Fifth Ottawa Symposium on — sponsored by the Canadian Association for Applied Spectroscopy, September, 1958, 137(N)
Fourth Ottawa Symposium on — sponsored by the Canadian Association for Applied Spectroscopy, September, 1957, 277(N)
Pittsburgh Analytical Chemistry Group and Spectroscopy Society of Pittsburgh, 860(N)
March, 1959, 860(N)
automatic techniques using small computer, 872(SA*21*)
of enzymes in living cells, 870(FA*11*)
field of tuberculosis, 870(FA*22*)
flame
excitation as function of sample flow, 576(L)
gas
excited, 284(F*2*)
infrared
Fisk University Annual — Institute, August, 1958, 505(N)
Gordon Research Conference, August, 1958, 359(N)
summer courses on technique and applications of —, Massachusetts Institute of Technology, August, 1958, 360(N)
mass
book on, 584(B)
molecular
report of meetings on —, Commission on Molecular Spectroscopy of the International Union of Pure and Applied Physics, Paris, July, 1957, 505(N)
spark discharges and flames
excitation of solutions, 865(TB*31*)
symposia
applied
Fifth Ottawa Symposium on — sponsored by the Canadian Association for Applied Spectroscopy, September, 1958, 137(N)
Fourth Ottawa Symposium on — sponsored by the Canadian Association for Applied Spectroscopy, September, 1957, 277(N)
ninth annual, Chicago, June, 1958, 137(N), 199(N)
tenth annual, American Association of Spectrographers, Chicago, June, 1959, 860(N)
infrared
Gordon Research Conference, August, 1958, 359(N)
molecular structure and, 277(N)
Sphere
incomplete integrating, 287(FC*64*)/828
Standards
color
in commerce and industry, 864(TA*1*)
television tubes, 1021(N)
available from National Bureau of Standards, 1021(N)
wavelength
germanium, 1998–1630 A, 31
vacuum ultraviolet
germanium, 1001
Staud, Cyril J.
awarded honorary Master's Degree by the Photographers' Association of America, 74(N)
Surfaces
gloss scale for paint, 741
reflecting
aluminum-nickel optical, 583(L)
conical, 681
quality of, 681
Symposia
chromatic discrimination
fundamental mechanism of —, Paris, July, 1958, 867(TC*61*)
"Electronic Scanning of Antennas," Air Force Cambridge Research Center and Rome Air Development Command, April, 1958, 200(N)
"Extremely High Temperatures," Air Force Cambridge Research Center, March, 1958, 200(N)
Gordon Research Conferences, 1958, 359(N)
light and vision, University of Michigan, March, 1958, 140(N)
microscopy, Chicago, June, 1958, 361(N)
optics and metrology, Belgium Committee of Optics, International Commission of Optics, May, 1958, 199(N)
Parliament of Science report, Washington, March, 1958, 292(N)
radiation and optics, International Commission for Optics, Stockholm, August, 1958, 432(N)
spectrometry
Panel of Hydrocarbon Research Group (Institute of Petroleum) and Committee E-14 of the American Society for Testing Materials, University of London, September, 1958, 199(N)

Sixth Meeting on Mass —, American Society for Testing Materials, New Orleans, June, 1958, 200(N)
spectroscopy
American Association of Spectrographers, June, 1959, 860(N)
applied
Fifth Ottawa Symposium on — sponsored by the Canadian Association for Applied Spectroscopy, September, 1958, 137(N)
Fourth Ottawa Symposium on — sponsored by the Canadian Association for Applied Spectroscopy, September, 1957, 277(N)
ninth annual, Chicago, June, 1958, 137(N), 199(N)
Pittsburgh Conference, March, 1959, 860(N)
infrared
Fisk University Annual — Institute, August, 1958, 505(N)
Gordon Research Conference, August, 1958, 359(N)
molecular structure and, 277(N)
New England Society, 434(N)
television
color
announcement of publication of proceedings of International Symposium on Physical Problems of —, Paris, July, 1957, 73(N)

Technical Calendar
74, 138, 201, 278, 362, 435, 507, 586, 674, 763, 862, 1022
Teele, Ray P.
elected Director of Illuminating Engineering Society, 862(N)
Television
color
announcement of publication of proceedings of International Symposium on Physical Problems of —, Paris, July, 1957, 73(N)
book on, 671(B)
telescopic visual colorimeter for, 474
eye-marker
records eye fixations on changing visual scenes, 439
N.T.S.C. color
perceptions of reproduced color examined, 867(TC*63*)
Temperature
flame
photographic technique for measurements in luminous rocket exhaust, 717
high — measurements of material in exhaust path of rocket engine
two-color method, 282(TC*64*)
Time
Ephemeris — determined with dual-rate moon camera, 282(T*51*)
Universal — determined with photographic zenith tube, 282(T*51*)
Transmission (see also *Transmittance*)
infrared
through metal light pipes, 531
light
turbidimetry
apparatus for recording small changes, 502(L)
Transmittance (see *Transmission*)
Trees, Richard E.
awarded the Meritorious Service Award of the U. S. Department of Commerce, 673(N)
Tube
photographic zenith (PZT), 282(T*51*)
determination of Universal Time, 282(T*51*)
shock
high-temperature — for atomic spectra studies, 284(F*3*)

Tungsten
spectral emissivity of, 608
Turbidimetry
light transmission
small changes in — recorded, 503(L)

Van Nostrand's Scientific Encyclopedia
new edition, 278(N)
Vapors
Verdet constants in 3635–9875 A range, 339
Vision
accommodation
fluctuations significance, 669(L)
variability
steady fixation at various levels of illuminance, 193
acuity
brightness and — with intermittent illumination, 726
contour perception
illusion and reality, 112
monocular and binocular
interrelation of — in making an equidistance judgment, 233
moving test objects, 799
movement and illumination effects, 803
orientation effect on — of fine wires, 628
physiological nystagmus variation with convergence, 288(FD*84*)
stereoscopic — and observation distance, 287(FD*82*)
adaptation
chromatic
luminance and constant brightness, 228
dark
pigeon's threshold with red test stimulus, 274(L)
binocular
book on, 198(B)
metric geometry and space perception, 328
Pulfrich phenomenon and simultaneous brightness contrast, 887
space perception
experiments connected with Luneburg theory analyzed, 911
brightness
dependence on luminance, 287(FD*81*)
judgments of relative, 445
Bunsen-Roscoe law
absolute threshold measurements in human fovea, 422
light-adapted electroretinogram, 412
color
appearance
comparative predictions of — with change from daylight to tungsten adaptation, 284(TD*86*)
blind unilaterally
binocular brightness matches in various spectral regions, 622
critical fusion frequency in various spectral regions, 614
change in perception with bright sources, 283(TD*84*)
chromaticity and luminance differences, 820
discrimination in animals and man
symposium on —, Paris, July, 1958, 867(TC*61*)
normal observer
luminosity curve, 509
quantitative evaluation of — perception, hypothesis, 722
red/green ratio and luminance level effect, 283(TD*83*)
and refractive error, 288(FD*87*)
selection of color film neutrals, 215
temperature and scotopic thresholds, 283(TD*85*)
theory, 509
dichromatism and mechanisms, 509
trichromats
wavelength discrimination curves for point sources, 129

Vision (Continued)
tritanope
color mixture data, 509
psychophysical study of congenital, 284(TD*87*)
conference on light and —, University of Michigan, March, 1958, 140(N)
discrimination
foveal
nonthreshold flicker, 500(L)
movement
stimulus luminance on upper speed threshold, 125
electroretinogram
light-adapted
luminance — duration relationships, 412
localized — from isolated frog retina, 418
eye
cataract lens
wide-field aspheric — series, 868(TC*67*)
electroretinogram
red stimuli of different time distribution of luminance, 437
fixation recorded on changing visual scenes
television eye-marker used, 439
human
book on — and earth satellite detection, 672(N)
new edition of *The Human Eye in Anatomical Transparencies* published by Bausch & Lomb, 585(N)
microwave model of, 899
characteristics of model retinal receptor studied, 899
light scattering from cornea and from lens, 120
movements
involuntary, 274(L)
measurement of, 288(FD*85*)/808
saccadic — during monocular and binocular fixation, 288(FD*86*)
photoreceptor
photoconductivity and, 581(L)
retinal image
stationary — with no eye attachments, 274(L)
small movements measured, 808
flicker-fusion-frequency
electronic multiflash generator, 191
fovea
human
absolute visual thresholds, 422
systems analysis, 777, 784
cortex systems with intermittent and modulated light, 777, 784
attenuation characteristics with white and colored light, 777
phase shift in brightness and delay in color perception, 784
luminosity functions
various field sizes and retinal illuminance, 406
mesopic
luminosity and chromaticity, 891
spectral sensitivity curves compared with scotopic and photopic, 185
perception
book on, 670(B)
book on form — and psychology, 672(N)
photic stimuli
fusion of intermittent — with alternating durations, 867(TC*64*)
photopic
spectral sensitivity curves compared with mesopic and scotopic, 185
pupil
transmission of — and transformation of intensity matrix, 136(L)
retina
difference limen as function of — eccentricity and background brightness, 731
entoptic stray light distribution, 13
frog
localized electroretinograms, 418
luminosity functions for normal trichromats, 406
pigments, book on, 761
response of — to light entering different part of pupil, 392
scotopic
spectral sensitivity curves compared with mesopic and photopic, 185
search tacks
effect of size of complex display on, 868(TC*66*)
stereo
viewing conditions effect on observer accuracy using stereoplatting equipment, 867(TC*65*)
stereoscopic
acuity and observation distance, 794
decentration effect on apparent size, 790
Stiles-Crawford Effect
white and green light, 392
threshold
absolute
in human fovea, 422
for wide fields at color temperature 2050°K, 884
foveal luminosity
absolute — determined and evaluated statistically, 877
variability computed, 877
luminance
discrimination of movement, 125
trichromats
wavelength discrimination for point sources, 129
visibility of object
location of target in empty field and effect on, 287(FD*83*)

Wavelength
germanium
standards
from 1998–1630 A, 31
in vacuum ultraviolet, 1001
standard
germanium
from 1998–1630 A, 31
in vacuum ultraviolet, 1001
report by the Advisory Committee for the Definition of the Meter, 361(N)
Wave Optics
geometrical optics compared with — by Fourier analysis, 57
Wright, Norman
awarded the Pittsburgh Spectroscopy Award, 586(N)

X-Rays (see also *Radiation, Sources,* and *Spectra*)
diffraction
new publication, 200(N)
summer program in the Metallurgical Applications of —, Massachusetts Institute of Technology, 504(N)

Zinc Sulfide
electroluminescence of — as equilibrium process, 647